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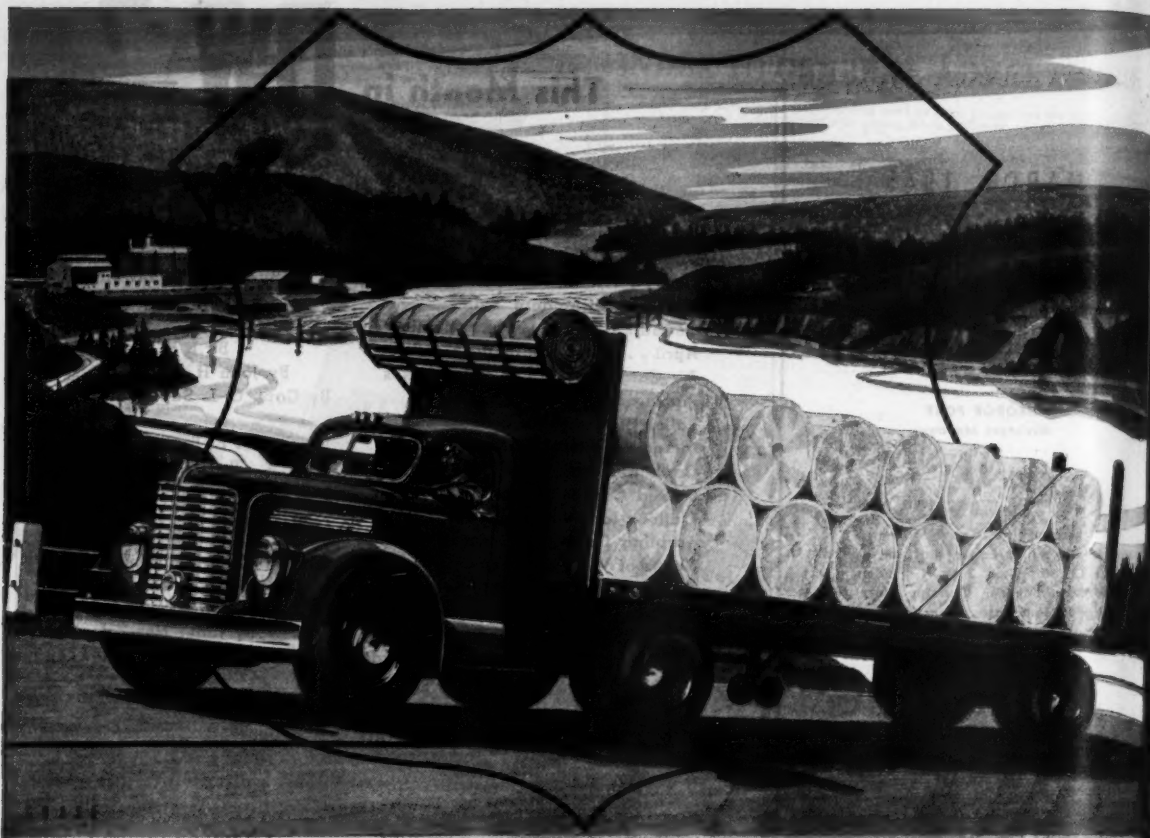
DW The Magazine That Integrates All Phases of Distribution

THE publication in which shipper, carrier, receiver, warehouseman and equipment manufacturer meet on common ground to obtain and exchange ideas and suggestions for more efficient and economical distribution of raw materials and finished products.

D and W is a clearing house of information for all who are interested in distribution of anything, anywhere from points of origin and production to points of ultimate use and consumption whether sectional, national or international.

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Distribution Cost Reduction

WE take pleasure in publishing elsewhere in this issue an article written expressly for *DandW* by Walter F. Crowder, chief, Distribution Division, Bureau of Foreign and Domestic Commerce, on "An Over-All Approach to Distribution Cost Reduction." We believe Mr. Crowder's article is an important contribution to the subject, and that the facts presented and the opinions expressed deserve careful study by executives interested in and responsible for more efficient and economical distribution.

It is particularly gratifying to have our basic concept of distribution endorsed without reservation by a gentleman of Mr. Crowder's attainments. He agrees with us that distribution begins with the movement of raw materials and that it ends only when a finished product has reached its ultimate destination, that is, the final user or consumer.

Moreover, as Henry G. Elwell, our traffic consultant, has consistently pointed out in his current series of articles on "Cost Factors in Distribution," Mr. Crowder also stresses the fact that "distribution cost reduction cannot be approached successfully by attacking costs at one point only. Rather, the attack must be on a broad front at every stage in the distribution of commodities whether raw materials or finished products."

Other points of special interest in Mr. Crowder's article deserve consideration and comment.

"The fact that marketing costs have increased while production costs have decreased," he states, "furnishes no indication of the relative efficiency of marketing and production. In countless cases, the decline in production costs was made possible by, and was responsible for, the increase in distribution costs."

While the point taken undoubtedly is valid, at the same time, it is a very caustic criticism of the sagacity of business management. The fact is incontestable that if even a fraction of the time, money, research and analysis given to increasing the efficiency and economy of production had been used to accomplish a similar purpose in distribution, the relative efficiency of production compared with distribution would not be so apparent and,

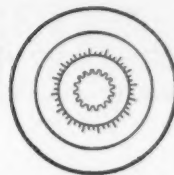
both economically and politically, so dangerous as it is today.

We are willing to make all possible allowances for the complexity of distribution problems as compared with those of production, because of the human elements involved in distribution that cannot be controlled, but we cannot escape the conclusion that the chief reason why little was done to improve distribution while a great deal was done to improve production was because management did not understand distribution. In too many instances, management still does not comprehend that distribution is an over-all problem involving many inter-related factors.

That is why we are everlastingly harping on the need of broader concepts of distribution. Until men see the problem as a whole and realize that distribution is not merely a local, individual or regional problem, but fundamental to our whole national economy, cost reduction and more efficient standards of practice in all phases of distribution will be impossible to attain on any broad scale.

Citing another reason why an over-all approach is necessary in dealing with distribution cost reduction, Mr. Crowder points out "that practically all so-called distribution or marketing or sales costs are inextricably bound up with manufacturing and other cost factors, as well as with sales volume and with profits. No important distribution cost factor can be separately reduced or eliminated without some possible repercussion on other costs, or a possible reduction of sales volume and profits."

Editorials



"... around every circle another can be drawn ... every end is a beginning ..."

This emphasizes in still another way the need of more detailed and correlated knowledge. We need a more scientific study of our entire distributive process than has ever been attempted.

It is interesting and illuminating also to note Mr. Crowder's confidence in the efficacy of coordinated action.

"Cost reduction within the individual firm is but the first stage in an attack on the problem," he states. "Important reductions in distribution costs can also be accomplished by an over-all approach to the problem based on the relations between firms; that is, by integration or coordination of marketing functions between firms at different stages in the channels of distribution."

Certainly every possibility of cost reduction at every step and at every stage in the movement of goods through production and distribution should be explored; for lower costs and lower prices to ultimate consumers mean broader markets, which benefit everybody.

• • •

Standardization of Pallets

ACTION being taken by the Division of Simplified Practice, U. S. Department of Commerce, for the standardization of skids and pallets and for more widespread use of palletized unit loads by industry generally, long advocated by *DandW*, is encouraging. It is a step in the direction of more efficient and economical distribution.

In this connection, it is interesting to observe in a report on the subject, published elsewhere in this issue, that the attention of the

conference was directed to the need, with respect to rail carriers, of a uniform height of car floors above the tracks as well as reduction in number of car sizes, a matter that Matthew W. Potts, our materials handling editor, discussed at length in last month's issue. The same idea, of course, holds true in principle for trucks and trailers.

Standardization along these lines will help materially to reduce costs and to make distribution more efficient.

An Over-All Approach to

THE statement that "distribution costs are too high" has been repeated so often that many businessmen accept it as a fact without any further analysis. When we begin to analyze the reasons for this widespread belief, we find that it stems in part from the fact that a large and increasing proportion of the consumer's dollar goes into distribution, while a declining proportion goes into production.

It also arises from a mistaken notion of what distribution is. If we consider distribution broadly, it includes the movement or flow of goods from sources of origin to final points of consumption or use. Distribution cost reduction cannot be approached successfully by attacking costs at one point only. Rather, the attack must be on a broad front at every stage in the distribution of commodities whether raw materials or finished products. We shall attempt to point out here what the individual firm (manufacturer, wholesaler or retailer) can do through an over-all approach to cost reduction.

Distribution Costs

The increase in the proportion of the consumer's dollar which goes to pay the cost of marketing goods rather than the cost of making them, however, is not in any sense objectionable so long as the consumer's dollar continues to buy more goods. The thing that really interests the consumer is the most favorable combination of production and distribution costs.

For example, a man purchases a pair of shoes for \$5. Only 40 percent of the price (\$2) may have gone for producing the shoes while 60 percent (\$3) may represent the cost of distributing them. The purchaser is better off, however, than he would be if he had to pay \$7.50 for the same shoes, even if only 20 percent of the price was cost of distribution, while 80 percent went into production costs.

Furthermore, there are sound reasons why, in the economy as a whole, distribution costs should account for a larger proportion of the consumer's dollar than in the past. Mass-production and lower production costs are processes which are often possibly only through the placing of an added burden on distribution. This is exemplified by the history of the shoe in-

THOSE who slavishly guide their actions by slogans, such as "distribution costs too much," may find themselves losing out in the competitive struggle. Rather, an over-all balancing of production and distribution costs to give high volume production of a good product to maximize fair profits appears to be the course of wisdom. Beyond the internal economies possible to the individual firm through this approach lie the economies through closer coordination of the functions between firms farther up the distribution stream and of those which are in a position farther below.

dustry. The production of shoes in the United States was started by the shoemaker who worked in his own home, making shoes to order for the individuals in the community, and by the itinerant shoemaker who traveled from village to village, carrying his tools on his back, doing repair work, and often contracting to make shoes for an entire family. Next came the small shop which accommodated three or four workmen. This stage in turn was followed by the small local factory, in which much of the work was still done by hand, and which had an output of only a few pairs per day.

1850 v. 1936

The typical modern factory of today with its power-driven machinery can turn out tens of thousands of pairs every workday in the year. To produce 1,000 pairs of medium grade men's shoes in 1850 required about 15,500 manhours. In 1936, one thousand pairs of shoes of comparable quality made by the machine method required only 935 manhours.

It is obvious that this change in the methods of producing shoes resulted both in a revolutionary lowering in production costs and in an increase in marketing costs. In fact, when the shoemaker produced for his local community or traveled to his customers, there were practically no distribution costs. It is also obvious that the use of factories and power-driven machinery was only feasible because of the added distribution mechanism (and resultant added costs) which made it possible to sell the increased output of the factory in markets much larger than those served by the itinerant shoemaker or small shop.

Thus, the fact that marketing costs have increased while production costs have decreased furnishes no indication of the relative efficiency of marketing and production. In countless cases, the decline in production costs was made possible by and was responsible for, the increase in distribution costs. Only when distribution costs are not reduced when they could be are they too high. Whether marketing operations are more or less efficient than manufacturing processes, in this sense, is an open question. Neither marketing nor production is so efficient as it could be, thus costs in both fields are too high.

Cost Reduction

Concentration of production in one plant is economical only up to the point where the savings in production costs exceed the additional marketing costs which result from this concentration of production. The modern large factory selling in a wide market must not merely produce goods cheaper than the small local establishment, but enough cheaper to pay the added transportation costs on its raw materials and its finished products. It must also effect a saving sufficient to pay the other additional costs of finding and reaching that wide market.

This does not condemn centralization of mass production nor does it mean that distribution is inefficient because it has to bear the burden of the added marketing expenses outside of the factory. It merely serves to point out that the economies of mass production are not a clear gain, and may be outbalanced by increased distribution cost if over-all management is not efficient. It also illustrates the

to Distribution Cost Reduction

TO accomplish these objectives, we will need a greater awareness on the part of top management of the over-all distribution problems of moving goods from mines and farms through manufacturers, wholesalers and retailers to the ultimate consumer. Every possibility of cost reduction at every step and at every stage in the movement of goods through production and distribution must be explored. Lower costs and lower prices to ultimate consumers means a broader market. We will need more and better trained research men, who have the specialized training needed.



By WALTER F. CROWDER

Chief
Distribution Division
Bureau of Foreign & Domestic Commerce
U. S. Department of Commerce

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point that total costs cannot be reduced by concentrating attention on distribution costs alone. The individual businessman, when wrestling with the job of cost reduction within his own firm, should adopt an over-all, company-wide cost and profit approach directed toward lower costs, lower prices, larger volume and higher profits.

It should be clear that the businessman, like the consumer, is interested in the most favorable combination of production costs and distribution costs within his individual firm. His objective is to sell a greater quantity of better goods at lower prices to the consumer and thereby to maximize his profits. This objective can be achieved best by constantly striving to reduce his total costs. If the businessman, mistakenly paying heed to the slogan that "distribution costs too much," should concentrate his attention only on reducing distribution costs, he may be led to action that is competitively dangerous, and which may result in a reduction in sales volume, an increase in total costs, and a decline in final net profits.

Intangible Elements

The product which the ultimate user buys is composed of many tangible and intangible elements. The product itself is tangible, but the ultimate user may be equally interested in intangibles such as the service and guarantees that go with the product, the attractiveness of the package, credit terms, return policy, convenience of purchase, confidence in outlet or sales representative and so on. Management may gain by experiments in the reduction or elimination of some or all of these intangibles. But, on the other hand, it

may lose. Businessmen should approach this reduction or elimination process with full knowledge that the consumer may prefer to pay more for the more extensive services offered by competitors.

The businessman who adopts the over-all approach to cost reduction will first engage in the research work necessary to ascertain the wants and needs of his customers and the competitive situation before he cuts his distribution costs by simply eliminating intangible distribution services.

Another reason why an over-all, company-wide approach is necessary in dealing with distribution cost reduction is that practically all so-called distribution or marketing or sales costs are inextricably bound up with manufacturing and other cost factors, as well as with sales volume and with profits. No important distribution cost factor can be separately reduced or eliminated without some possible repercussion on other costs, or a possible reduction of sales volume and profits.

Low-cost mass production, for example, is based on standardized products manufactured in long uninterrupted runs which permit standardization of manufacturing methods. These long uninterrupted runs may have been made possible by more services, or greater advertising and other mass merchandising efforts, permitting wide distribution. If any one manufacturer cuts these distribution costs too much, his volume may decrease.

Wholesaling and Retailing

Inter-relationships between different cost factors can also be found at the wholesale and retail levels, where most costs may be considered to be

"distribution" costs. The "over-all approach" applied to wholesaling and retailing means a recognition of the fact that there is no use cutting costs in one place if the result is an increase somewhere else.

Wholesalers covering extensive trading areas commonly have branch houses, because of the economy of locating the bulk-breaking point as near as possible to the retail store. Other advantages of using branch houses are lower travel expense, closer contact with customers, and speedier deliveries. The disadvantages, however, are increased investment in buildings, inventory, and equipment and added difficulties in supervision.

Branch Outlets

The wholesaler tries to space his branches so that his total operating expenses are at a minimum. The spacing of branches affects the operating expenses since, with many branches located close to each other, delivery and travel expenses are decreased while the expenses of maintaining branches are increased. Conversely, with fewer branches located at greater distances from each other, delivery and travel expenses are increased, while the branch maintenance expenses are decreased. The problem is to find the optimum num-

If we consider distribution broadly, it includes the movement or flow of goods from sources of origin to final points of consumption or use.

Distribution cost reduction cannot be approached successfully by attacking costs at one point only. Rather, the attack must be on a broad front at every stage in the distribution of commodities whether raw materials or finished products.

ber of branches and to space them to insure the lowest total expense.

Coordinated Action

Cost reduction within the individual firm is but the first stage in an attack on the problem. Important reductions in distribution costs can also be accomplished by an over-all approach to the problem based on the relations between firms; that is, by integration or coordination of marketing functions between firms at different stages in the channels of distribution. Suppliers of raw materials, manufacturers, wholesalers, retailers, and others, if they will but pool their efforts, and study their jobs from an over-all viewpoint, will find many opportunities for reducing the final cost to the consumer. While costs at one stage might be increased, they would be more than offset by savings at subsequent stages.

Many Examples

There are many examples illustrating that the over-all approach to distribution cost reduction through inter-firm cooperation is not altruistic, but is productive of practical benefits to all concerned:

1. Many department stores have studied packaging of products by manufacturers to make product handling in the store less costly and repackaging unnecessary.

2. A large hardware wholesaler works out with his manufacturers the quantity of items to be contained in a package, based on a study of economical purchase quantities by retailers, so that "broken package sales" at the wholesale stage are eliminated.

3. Department stores date their purchases so that manufacturing costs are reduced through elimination of seasonal fluctuations.

4. Mail-order houses have plans for tying in their own and manufacturer activities so closely that savings are shared three ways: manufacturer, mail-order house, and consumer.

This over-all approach to the reduction of distribution costs, both intra-firm and inter-firm, requires two things: First, much more research and analysis than have been devoted to this field in the past; and second, use of the results of this research by top management and a

greater interest in the problem of over-all cost reduction.

A Case in Point

A job that is currently being worked out in the Department of Commerce points out the possibilities of over-all cost reduction through coordination and simplification. While this study is concerned specifically with the streamlining of wholesale grocery operations, the ideas developed are equally applicable in a number of trades and at various levels in the movement of goods from mines and farms to the ultimate consumer. The story begins with efforts of individual firms to reduce their costs, but leads to the conclusion that inter-firm cooperation is necessary for most effective results.

Multi-Story Buildings

Large numbers of wholesale grocers, like wholesalers in many other lines, find themselves saddled with antiquated multi-story buildings that are extremely wasteful in that they require multiple handling of goods, do not have adequate and separated receiving and shipping facilities and structurally are not adaptable to the use of power-handling equipment. The operations of the wholesalers have to be shoe-horned into these buildings that are not designed for the functions the grocers have to perform. Many wholesalers recognizing the tough postwar competition they will face, have resolved to build warehouses that will fit their operations. Fortunately, a number of progressive wholesale grocers had built specially designed one-story warehouses prior to the war that enabled them to use the assembly line principle in order

picking, the punch-card system of internal control, palletization of their stocks and power equipment for handling. Thus they were able to arrange the daily routine in such a way as to handle all goods a minimum number of times, to handle them in bulk lots rather than case by case, and to make each handling a progressive step forward toward the customer.

Our job in the Department of Commerce is to write up the story of their experience as a guide to the planning of other operators. This study should be available within the first few months of 1945. A few of the results developed in the study, however, may be pointed out here. It will be noted that these progressive wholesalers have used an over-all approach in the internal cost reduction job associated with physical handling and have endeavored to coordinate their operations backward to their suppliers and forward to their retail customers.

1. Warehouse Costs

The streamlined wholesale grocers operating on the "turnover" principle perform all of their warehouse functions at a cost representing slightly more or less than 2 per cent of sales. That figure includes occupancy and inventory costs, the costs of the operations involved in receiving, storing and order picking, and the cost associated with checking and drayloading. It is entirely probable that in the trade at large the average cost of performing these functions is at least twice as high and, of course, in some houses it may be three or four times as high as this figure.

As stated above, these streamliners have profited from an intensive study of the daily routines in their own businesses and have applied in their new, one-story warehouses, methods that facilitate output while reducing the percentage costs associated with that output, per ton, per hour, and per employee. They have applied industrial machines to all jobs that such equipment can handle at lower cost than unaided manpower. They have sought to discover and apply the principles that must underlie the best use

(Continued on page 92)

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Another reason why an over-all, company-wide approach in dealing with distribution cost reduction is that practically all so-called distribution or marketing or sales costs are inextricably bound up with manufacturing and other cost factors, as well as with sales volume and with profits.

No important distribution cost factor can be separately reduced or eliminated without some possible repercussion on other costs, or a possible reduction of sales volume and profits.

Cost Factors in Distribution

HERE and there one finds a manufacturer or a warehouseman contending that costs of distribution have been reduced to the lowest possible level. But in the main "it is generally admitted that distribution costs are too high."

With costs of distribution too high, industry has a major problem to be solved: ways must be found to lower such costs. The first approach is to attack each component part, beginning at the bottom of the scale.

Over-all Distribution

Although the term "distribution" does have a universal meaning, as described in the opening article of this series,* for our present consideration let us use it in its more restrictive sense as applied to the apportionment and delivery of goods to his customers by the individual manufacturer. After all, the unravelling of

*See *Daud W.*, Nov., 1944, p. 17, wherein it is stated: "It is the position of *Daud W.* that distribution starts with the movement of raw materials and ends only when a finished product has reached its ultimate destination, the final user or consumer."

Bit by bit each component part of the cost of distribution must be scrutinized, analyzed and reviewed if the mystery pertaining to "mass distribution" is to be uncovered successfully as has been done in the sphere of "mass production." The distribution of a particular manufacturer involves many factors of cost, all of which are lodged in the selling price of the finished product.

By HENRY G. ELWELL
Traffic Consultant

the complex proposition appertaining to over-all distribution must start with each unit of industry.

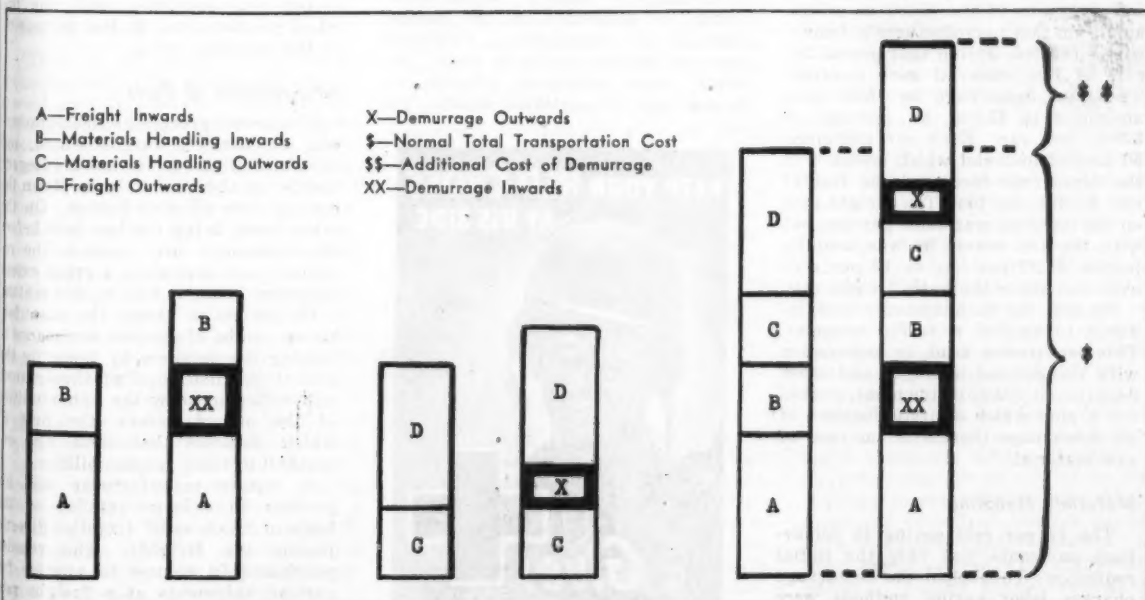
The distribution of a particular manufacturer involves many factors of cost, all of which are lodged in the selling price of the finished product. Moreover, to meet the issue of reducing the total cost of distribution the separate kinds of costs (materials handling outwards, freight outwards, etc.) must be considered even though they are absorbed in the selling price.

Among the costs contained in the sales price of the finished product are those of transportation which, strange as it may seem, are to a great extent ignored by the vast majority of manufacturers and their accounting departments.

Transportation Costs

Costs of transportation should be segregated to present a true monthly record of figures. This is essential if

TRANSPORTATION CHARGES INCLUDED IN TOTAL COST SHOWING EFFECT OF DEMURRAGE:



manufacturers are to succeed in lowering costs of transportation along with other outlays.

For a proper analysis, costs of transportation should be broken down and divided into the following main sectors: (a) freight inwards; (b) materials handling inwards; (c) materials handling outwards; (d) freight outwards. Of these, (a) and (b) eventually should be allocated to production cost, and (c) and (d) to selling cost as direct charges to the company's distribution cost.

"Freight inwards" should embody the cost of freight on inbound raw materials, wrapping and packing supplies, etc., whether the supplier or the buyer directly pays the freight. There are further accounts to be included among which there is that of demurrage inward on inbound freight cars placed by the railroad for unloading by the manufacturer.

Demurrage Charges

Demurrage charges on inbound freight cars of raw materials provide for an illustration showing how remotely related offshoots can raise the cost of production. Different items could be used, but we select demurrage primarily because it is one cost which a shipper/consignee can control and even eliminate.

A certain manufacturer year after year paid heavy demurrage on inbound cars of low value raw material. Each year about the same quantity of cars were received with approximately the same amount of demurrage being paid. This manufacturer did not maintain a general traffic department; his cost accounting department did not segregate demurrage charges, or any other transportation cost; his unloading methods were inadequate; his handling operations were antiquated.

Taking one of the years as an example of this manufacturer's demurrage situation, during that period 252 cars of raw material were received. The total demurrage on these cars amounted to \$5,260, an average of \$20.87 per car. Each car contained 50 tons of material which meant that the demurrage increased the freight cost by 42c. per ton. The freight rate on the material was \$3.50 per ton, but with the 42c. excess he was actually paying \$3.92 per ton, or 12 per cent over and above the basic freight cost.

Finally, the manufacturer was induced to employ a traffic manager. This department head, in cooperation with the general manager and other department heads of the plant, worked out a plan which entirely disposed of all demurrage thereafter on cars of raw material.

Materials Handling

The 12 per cent saving in demurrage payments was only the initial reduction. To abolish the demurrage charges labor saving methods were inaugurated, and modern materials

handling equipment installed. The changes brought about lower production cost not only by eliminating demurrage, but also through a steady reduction in cost of 'materials handling inwards.'

As mentioned above, demurrage charges were selected for illustrative purposes because they add a cost which can be avoided by the application of intelligent effort on the part of a shipper/consignee in connection with the unloading of inbound materials.

Of course, there are times when "bunching" of cars in delivery by the railroad, or other out-of-the-ordinary circumstances may open the door for some slight demurrage, but the total in any one year should be at a very low figure. This is proven by the fact that numerous large and small receivers of loaded freight cars never incur any demurrage at all.

An Excellent Index

In general, demurrage conditions provide an excellent index of the efficiency of a company in relation to materials handling. Where heavy demurrage charges appear as a regular monthly cost it indicates the absence of control and the lack of proper materials handling equipment. Conversely, where demurrage is an exception it will be found that proficiency prevails in the unloading and handling of materials.

It is passing strange that in most cases where demurrage is a constant expense it is on cars of inbound materials; seldom on the outbound cars of finished products. This could be for a variety of reasons, such as the inability on the part of the receiver to control the delivery of cars of inbound materials.

It may be that a psychological "kink" is entangled in the mental attitude of management. Outbound cars of finished products mean "income" from customers, whereas, inbound cars of material denote "ex-

pense" in purchasing. Or perhaps management sees the need for a smooth flow of finished products to customers, but fails to fully comprehend the necessity for taking advantage of every opportunity to reduce costs in handling inbound materials.

Whatever may be the reason for the continual incurring of demurrage charges in any given company, nevertheless, such cost generally can be avoided. Therefore, if demurrage can be wiped out or reduced, then also additional costs of "freight inwards" can be lowered. Similarly, study and research will bring about reductions in "materials handling inwards."

The Accompanying Chart

The accompanying chart shows the effect of demurrage in relation to the total cost of transportation. It demonstrates that dollars and cents are "tacked on" to the normal transportation cost where extra cost results from demurrage. It coldly, but factually, provides a reminder that the same principle applies to other costs.

In actual practice, increasing or decreasing the height of the "blocks of cost" in the chart will result either in a higher or lower cost in the dollar sign column. If all costs are not kept at the lowest possible level then the aggregate disbursement will be excessive. This is a simple fact, but it is one, unfortunately, that is frequently disregarded by management where "transportation cost" is concerned.

It is a far cry from the cost of demurrage on cars of inbound raw material at the plants of processors or manufacturers to the retailers' cost of delivering goods to customers, yet both costs are segments in the comprehensive national distribution which starts with the movement of raw materials and continues until the finished products are in the possession of the ultimate users.

Inter-relation of Parts

Producers, processors, manufacturers, wholesalers, warehousemen, and retailers, all are in the same category insofar as the need to bring down the cost of over-all distribution. On the other hand, being the last link before the consumers are reached, the retailers must depend to a great extent upon the others to help in this matter.

Of the entire group, the manufacturers can be of greatest assistance in helping the retailers by lowering the cost of distribution. Two illustrations will suffice to show the opportunities of the manufacturers, the first of which discloses that some are unmindful of their responsibilities.

A certain manufacturer sold his product to a large retailer on the basis of "f.o.b. mill" (retailer directly paying the freight). The retailer purchased in volume to provide for carload shipments at a freight rate

(Continued on page 97)



That a traffic system comprises the veins and arteries of a corporation and that the traffic department is the heart of the system seems obvious. By analogy, the traffic manager may be considered a cardiologist. It is his duty to see that the patient develops no cardiovascular disease. Where the electro-cardiogram gives evidence of such symptoms it is the traffic manager's duty to indicate the proper prophylactic or therapeutic treatment.

Functions of Modern Traffic

UNIQUE transportation problems, peculiar to Ansco's photographic industry, daily face its Traffic Department at Binghamton, N. Y.

A director of traffic for one of the country's largest industries has aptly said that a traffic system comprises the very veins and arteries of the company and the traffic department is the heart of it. Ansco's traffic department maintains a steady flow of raw materials into our plants and furnishes processed or finished goods to all parts of the world. Many products are made in these various plants. Every one of them is composed of more than one material and requires various machinery and equipment to produce. Unless the transportation of these items of material, which literally run into the millions, was handled efficiently, our company could not operate efficiently.



By JOHN MATHEWS
Traffic Manager
ANSCO, Binghamton, N. Y.

o o o

Time in Transit

Time is of primary importance. Consequently, the traffic department must provide whatever transportation is fastest and most suitable. This involves the use of airplanes, motor trucks, steamships, freight and express cars. Reducing time in transit does not just happen. Our transportation specialists are constantly working out faster and cheaper methods of handling our goods.

Our traffic department keeps track of every planeload, truckload and carload expediting those materials which are most urgently needed by our plants or by our customers. In this connection, traffic cooperates with the purchasing department, production planning, branch office administration, sales department and with the resident officers representing various branches of the armed forces. As a result of this cooperation, the traffic department comes in regular contact with the vendors, air lines, motor carriers, railroads and customers.

Of course, diversion in transit

sometimes becomes necessary. For example, when one of our plants recently needed machinery the following morning as a result of a Government request, the machinery was five days away by freight car. The traffic department immediately arranged for a transfer of these heavy machines from rail car to motor truck at Harrisburg and at Wilkes-Barre, Pa. The transfer was accomplished about midnight and the machines arrived at the plant in Binghamton early the following morning in trucks placarded to the effect that they carried "rush" material for the Government. Appropriate officials of the state police cooperated in this rapid move.

Keeping on Schedule

Because our Company wants to assure the customers' prompt receipt of its manufactured items, it is of great importance that we keep all shipments on schedule. Normally, it is possible for our traffic department to keep shipments on schedule for points such as New York, Chicago, Dallas, Cincinnati, Los Angeles and San

Francisco so that their time of arrival can be controlled within a few hours. Shipments are likewise expedited to hundreds of smaller destinations where our customers are in equal need of material. However, this is not always possible under present wartime conditions.

Most Suitable Transit

Providing the quickest and most suitable transportation is, of course, but one of the responsibilities of traffic. It is responsible for the judicious spending of hundreds of thousands of dollars yearly. Obviously, this is of direct importance to costs of operation and profits. It is the duty of our traffic specialists to protect the company by obtaining and maintaining freight rates at the proper level. Traffic must also, where possible, combine less truckload and carload shipments into truckload and carload, thus cooperating with the Government through saving carrier equipment and also saving our company thousands of dollars monthly.

Commodity Rates

A few years ago, the traffic department began the establishment of commodity rates applying on bulk movements to various branches and customers. Arrangements were made with the sales department and the branch office administrator to schedule accumulated shipments to customers and branches that our goods might move at the reduced commodity rates obtained and applicable only by truckload and carload.

Heretofore, it had been felt that the nature of our business demanded daily shipments where possible. At first, less than 50 per cent of the total tonnage to our branches was shipped truckload or carload, but for the past several months approximately 98 per cent was so moved with many thousands of dollars annual savings resulting.

Scarcity of Transit

Goods must move more rapidly than before the war in spite of a shortage of transportation equipment. In all phases of transportation, superabundance has been replaced by scarcity and transportation demand threatens to outrun the supply. First to be affected was ocean shipping as a result of war demands and submarine sinkings. Products for the west coast, previously handled through the Panama Canal, were transferred to the rails for the cross-country haul. Gulf and coastwise traffic, both inbound and outbound, were also turned over to the railroads. Next came the threatened shortage in railroad freight transportation which was averted largely through the cooperation of shippers and receivers and also as a result of the exemplary performance of the carriers. More recently there have come the stringencies in air transportation, in motor truck and inland water carriage. Cargo and express movements by air continue generally unsatisfactory without priority. Motor carrier haulage presents many problems. The reasons for the shipper and receiver problems in connection with the use of trucks are many and to a substantial extent beyond the scope of carrier control. The well-known reasons reiterated in the motor carrier embargoes, "Lack of equipment, lack of parts, lack of tires, etc.," are truly a great test for the most hard hitting motor carrier management.

Seller's Market

Without entering into a discussion as to what extent the "seller's market" in the motor carrier field has adversely affected service, it can be noted in passing that there is a certain amount of picking and choosing of freight. Certain carriers apparently finding themselves in a position where transfer of freight from another carrier is no longer desirable have either legally embargoed or by

other means eliminated or discouraged such transfer movement.

The time element is of prime importance in all movement of war material. It was said by a Transportation Officer of the Jersey City Quartermaster Depot which handles many foods, clothes and other necessities for our fighting forces in the European theater that:

"Transportation is as truly a weapon as any gun, aeroplane, tank, or other engine of warfare; because you must get the men, the weapons, and the supplies to the right place, at the right time, in order to win battles. To beat the enemy we have got to have more and better transportation than he has—just as we must have better soldiers and more and better munitions.

"The importance of transportation, as a vital element, is more evident in this war than ever before in the history of the world. . . ."

Government Shipments

The problem of supplying enough and on time to the Government begins at the sources of material located throughout the Western Hemisphere. The job ends when receipts are returned by the Army, Navy, Marine Corps, airplane builders, shipbuilders or other manufacturers for whom material is made. X-ray, cardio film and cardio paper for the field and base hospitals, gun film used for target practice, aerial film used to increase our knowledge of the enemy and to record our accomplishments, do not do our fighting men any good sitting on a siding at some railroad yard or at a motor carrier's transfer station.

We recently had a shipment which had to be delivered to an airport on Long Island, N. Y., within three hours from the time the traffic department received advice of it. At the time, the urgently needed goods were in one of our Binghamton plants. In approximately 40 minutes after we had received notice, a Civil Air Patrol plane that we had chartered took off from

the Tri-Cities Airport. Because the plane was entering a restricted area, we had to clear it through the New York Air Traffic Control, which, in turn, cleared the plane with the Second Fighter Command that controls the air defense for the New York area. We have many other emergency uses for Civil Air Patrol service.

Tracing Shipments

Every day dozens of shipments containing urgently needed material, inbound and outbound, are traced by telephone or wire as the case demands. Records of transfer points, exact transfer times, train and car numbers on forwarded shipments are maintained.

For example, on shipments from Binghamton, N. Y., to Norfolk, Va., truck is currently preferred over Railway Express Agency. Although the time in transit is supposed to be the same, the motor carrier is preferred for several reasons. We can "keep our hands" on these shipments more easily than those by Railway Express Agency. Within approximately 12 hours from the time material is picked up, advice is furnished as to what driver will move the shipment, what tractor and trailer number he is using and the scheduled departure and arrival time. In many instances, particularly to far-distant points, air and rail express are used.

Tracing express shipments presents many problems. To know definitely that a shipment will move forward on a certain train often requires the presence of one of our traffic men at the scene of departure. If the express shipment is moving as a carload, a special order from the superintendent of the railway where the express car originates is often necessary. In the case of less carload express shipments, personal pleas and persuasive talk is often needed, for passenger train conductors want to keep their trains on schedule and sometimes refuse to wait until the waiting express is loaded.

Railway Express Agency shipments must be traced from the start, because the multiple routes often available would otherwise make tracing impossible. Generally as no record is kept as to how the less carload express shipment was forwarded, the location of a delayed shipment becomes difficult once it has moved from the origin point.

To Illustrate

As an illustration of the extent to which it sometimes is necessary to go to keep track of shipments, it might be mentioned that a couple of weeks ago, as a result of the increased tempo of the war in Europe, several rush shipments had to be made to reach east and west coast ports by deadlines permitting no transportation

(Continued on page 98)

CAP . . . Emergency . . . CAP

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Because the plane was entering a restricted area, we had to clear it through the New York Air Traffic Control, which, in turn, cleared the plane with the Second Fighter Command that controls the air defense for the New York area.

We have had many other emergency uses for Civil Air Patrol service.

Principle of Unrestricted Transportation Indorsed By Canadian Traffic League

Sound regulation of all common carrier transportation agencies advocated with permission to all carriers to engage in any type or class of transportation. Wm. Ferguson, traffic manager, Colgate-Palmolive-Peet Co., Ltd., Toronto, reelected president at 29th annual convention of Canadian Industrial Traffic League at Montreal.

RESOLUTIONS calling upon the federal and provincial governments to formulate "at the earliest feasible moment such a broad transportation policy as will serve the best interests of the entire country," and advocating that "the inherent advantages of each type of transportation should be recognized and preserved," together with the reelection of William Ferguson, traffic manager, Colgate-Palmolive-Peet Co., Ltd., Toronto, as president, and an address by S. R. Noble, O.B.E., manager, Industrial Development Bank, Montreal, featured the 29th annual convention last month of the Canadian Industrial Traffic League at Montreal, Que., Canada.

Mr. Noble in his address explained the purpose and functions of the recently organized Industrial Development Bank, a wholly-owned subsidiary of the Bank of Canada.

Purpose of Bank

"The Industrial Development Bank was organized to promote the economic welfare of Canada through insuring the availability of credit to industrial enterprises . . . by supplementing the activity of other lenders and by providing capital assistance to industry, with particular consideration to the financing problems of small enterprises.

"Note that the business which the Bank may undertake is confined to industrial enterprises, which are defined in Section 2(d) as follows: industrial enterprise means a business in which the manufacture, processing or refrigeration of goods, wares and merchandise or the building, alteration or repair of ships or vessels or the generating or distributing of electricity is carried on.

"From this you will notice that we could not render assistance to transportation companies, but we can assist in the production of increased vol-

ume of goods, wares and merchandise and, if the volume of production is maintained, I am sure that is all that you gentlemen will ask for, so that I have, I think established your direct interest in the new Bank.

"The Industrial Development Bank is a wholly-owned subsidiary of the Bank of Canada, with a parallel directorate: the President is the Governor of the Bank of Canada and the Executive Committee is also the same as that of the Bank of Canada. The Bank began operations on Nov. 1 last, with an authorized capital of \$25,000,000, of which ten million dollars has been paid up; the balance will be available as needed and, after these funds are used up, the Bank may borrow up to three times its paid-up capital and reserves, its obligations being eligible for purchase by the Bank of Canada. The Bank may declare no dividends until the reserve is equal to the capital and, after that, may pay a maximum dividend of 4 per cent per annum.

To Lend Money

"The prime function of a Bank is to lend money. The business of lending money will be the sole function of the Industrial Development Bank. Should you visit our offices at 201 Notre Dame St. W., you will find no marble counters, no tellers' cages, no batteries of ledger posting, calculating and adding machines.

"No one is allowed to draw cheques on us or even to keep an account. We simply loan money and, having arranged the terms, do not expect much further contact with our clients if agreed terms of repayment are observed. We need no cash reserves as we will have no demand liabilities.

Postwar Needs

"The experience of the war years and probably the immediate postwar

years can provide no guide for the debt paying ability of industry if a depression of the character of the last one should again descend upon us. This Bank is designed as one small agency amongst other agencies with which you are familiar, to help towards avoiding postwar unemployment and depression.

"I am afraid, however, that anything and everything that can be done in connection with our internal affairs is not going to provide the final answer. The same handling of postwar problems as occurred after the last war will produce similar results intensified to the extent that this war has exceeded the last war in destructive force. Only statesmanship of a high order with a world outlook can provide the answer."

Resolutions

Among the resolutions adopted by the League were the following:

"This annual meeting records its conviction that it is most desirable that the federal and provincial governments should at the earliest feasible moment formulate such a broad transportation policy as will serve the best interests of the entire country, and that the principles so laid down should include as essential the following:

"(a) The inherent advantages of each type of transportation should be recognized and preserved.

"(b) No restriction should be imposed which would unduly prejudice any type of transportation in favour of another.

"(c) Safe, adequate and economic conditions of transport should be promoted by, inter alia, the establishment and maintenance of reasonable charges for services rendered, free from unjust discrimination or undue prejudice or preference between persons or localities.

"(d) Unfair or destructive competi-

tive practices should be prohibited whether between carriers of the same class or type or between carriers of a different class or type.

"(e) All carriers should be permitted to engage in any class or type of transportation so long as the regulatory tribunal finds that such activity is necessary and convenient in the public interest.

"(f) The competence of anyone affected (carrier or person) to file a complaint with the regulatory tribunal should be sanctioned by statute.

"In our opinion conformity with these principles can only be achieved by the sound regulation of all common carrier transportation agencies, and with administration thereof being vested in bodies having judicial powers, preferably in the Board of Transportation Commissioners for Canada where federal jurisdiction is involved, i.e., on inter-provincial and international traffic, and independent boards established by provincial legislature and similar with judicial powers over shipments moving locally within the individual provinces."

Officers

Elected as vice president of the League was W. J. McCallum, general traffic manager, Dominion Glass Co. J. E. Walsh, honorary president, is connected with the Canadian Mfrs. Assn., Toronto.

Chairmen and vice chairmen of divisions include:

B. C. Division: R. T. Van Horne, chairman; R. T. Elmer, vice chairman. Ontario Division: G. Paul, chairman; F. H. Gore, vice chairman. Prairie Division: E. J. Mercer, chairman; V. Sands, vice chairman. Quebec Division: J. Sarrasin, chairman; W. B. Cranston, vice chairman.

Notables

Among the notables on the dais at the annual banquet were:

W. J. McCallum, vice president elect, Canadian Industrial Traffic League; N. W. Van Wyck, freight traffic manager, Canada Steamship Lines, and president, Traffic Club of Montreal; Armand Voizard, directeur, Chambre de Commerce du District de Montreal; L. Eric Reford, president, Shipping Federation of Canada; Geo. Stephen, vice president, Canadian Pacific Railway Co.; Guy Tombs, past president, CITL; S. R. Noble, O.B.E., general manager, Industrial Development Bank; W. Ferguson, president, CITL; J. C. MacFarlane, president, Canadian Mfrs. Assn.; J. B. Keeler, president, National Industrial Traffic League (U.S.A.); J. H. Brace, second vice president, Montreal Board of Trade; Geo. H. Fairhead, general freight traffic manager, Canadian National Railways; W. M. Kirkpatrick, director, Freight Traffic, British Ministry of War Transport; T. C. Lockwood, Transport Controller; J. B. Baillargeon, president, J. B. Baillargeon Express, Ltd.

and after the war. It is not entirely a war measure which calls for proper packing. We must eliminate the loss that the shipper and receiver of goods sustains which he cannot possibly collect from the railroads.

In a claim for loss and damage, the shipper cannot collect for his loss of man hours, or he cannot collect for loss of customers, or loss of customer good will when goods are received by consignee in a damaged condition, or which become lost as a result of poor marking. Those are perhaps postwar problems, but nevertheless they prevail today as well.

While I have had very little chance to talk with many of the other officers of this 1945 campaign, there has been some discussion of our plan, and it has been virtually agreed that the campaign this year should bear down on the packaging of civilian goods rather than materials for the war. The latter, however, must not, and will not be overlooked in our zeal to properly pack and mark civilian shipments.

It's Your Fight

There is one word I would like to emphasize for the benefit of the shippers and receivers of freight. This is your fight. It is not the railroad's. You are the ones who are the losers. You cannot blame the railroads entirely for this tremendous loss and damage bill, and you cannot collect from the railroads for the loss of man hours, or the loss of materials, the loss of customers, or customer goodwill, and many other things that go with it. No, it is your fight, and not alone the railroad's fight.

The shipper should be taking the lead, notwithstanding that the entire expense of this program is borne by the railroads. If they did nothing else but pay the expense, they would have done pretty nearly their share of the work of preventing loss and damage in transit. Nevertheless they are going to cooperate with us through their claim prevention organization of station agents associations.

Take Off Your Coat

Take your coat and shirt off and get down to work. Don't sit in meetings and say "Aye," and then go home and pat yourselves on the back, feeling that you have done a good job. Do something about it—actually act! If you find that shipments are being received in bad order find out the reason why, tell somebody about it, and don't pull your punches.

One of the railroad men said the other day that there was some hesitancy on the part of railroads to make reports back to the shippers. There shouldn't be. The shippers should welcome such reports from railroad men, and a railroad man ought to be glad to make such a report. I see no reason for any hesitancy in making these reports. Locate the source of the trouble and report upon it, and the trouble will be removed.

April . . perfect shipping month

By J. E. Bryan

General Traffic Manager
Wisconsin Paper & Pulp Mfrs. Traffic
Assn., Chicago, Ill.

o o o

WE got overconfident not so long ago when our forces were making great headway against Germany and there was a noticeable letdown in the activities of some of the shippers, if not some of the carriers themselves, with the result that excessive demurrage charges were assessed to bring about the unloading of cars and their prompt release. That is just an intimation of what can and will be done if we become too complacent. We have been more or less complacent with the loading, packing, and packaging of merchandise shipments, and also carload commodities. That should be stopped.

Shortage of Materials

We know that shippers are up against a shortage of packing materials of the better grades, and have

been forced to use packages furnishing far less than customary protection, for domestic shipping. So far as shipping overseas is concerned the Army and Navy have laid down such strict rules for the manufacture of containers that are to be used for the protection of goods going overseas that there is very little complaint from that source now.

Must Look to Future

We must look to the future. We want to use a sort of postwar theme in our campaign. Proper packing must continue to be our watchword now

This is part of a talk made by Mr. Bryan as general chairman, management committee, Perfect Shipping Month Campaign, before a recent meeting of the Mid-West Shippers Advisory Board.

State Air Regulations Are Denounced As Hampering Trade Barriers

Head of Air Transport Assn. in opening of educational campaign declares that prohibitive state taxes through elimination of state gasoline tax refunds granted because of non-highway use tend to cripple postwar transportation.

WARNING of hampering trade barriers resulting from parallelism and duplicating state air regulations, and prohibitive taxes through elimination of state gasoline tax refunds granted because of non-highway use, Col. Edgar S. Gorrell, president, Air Transport Assn. of America, has launched an industry educational effort to halt drives in the states which, he declared, would cripple postwar air transportation.

With legislatures of all states except Kentucky, Louisiana, Mississippi and Virginia meeting in regular session this year, Col. Gorrell called the bills introduced in Massachusetts, Missouri, Ohio and Texas "opening grants" of a drive by the National Assn. of Railroad and Utilities Commissioners to bring air carrier operators under state jurisdiction.

The industry spokesman said members of NARUC at their annual meeting last November adopted a so-called "Uniform State Air Carrier Bill" and were now urging its general enactment by states. This, or similar legislation, Col. Gorrell declared, would subject intrastate operations of interstate carriers to control of the utility commission or like body of any state whose legislature enacts it.

He explained that operations of U. S. Flag Airlines already are under regulation by the Federal Civil Aeronautics Authority. Since certain of the air carriers presently serve communities in as many as 23 states, and will serve an even greater number in the postwar period, Col. Gorrell emphasized that granting power to state agencies to parallel, duplicate or exceed Federal regulations would do nothing more than erect excessive, unwarranted and costly trade barriers from which the public would suffer just as much as the air carriers.

Regarding state taxes on gasoline consumed by airplanes, Col. Gorrell called "highly beneficial" the policies and practices most states follow in exempting or refunding such taxes. The savings involved, he said, have enabled the U. S. Flag Airlines to serve better and more economically the particular communities of the various states at whose airports they land and take off.

Because of public demand for ever greater numbers of airports in most states, Col. Gorrell said many proposals have been made that these refunds be entirely or partly discontinued and that the resulting proceeds be utilized generally throughout the states for aeronautical purposes

of various kinds. He summarized the problem as follows:

"Like other classes of airplane owners and operators, U. S. Flag Airlines have been relieved from taxes imposed on gasoline in 29 states and the District of Columbia by virtue of exemptions or refunds because of non-highway use. In six more states there are partial refunds. In the re-

maining 13 states there are neither exemptions nor refunds, but in eight of them the resulting revenues are utilized in whole or part for aeronautical purposes.

"There are great differences between the use of airplanes by those engaged as air carriers in interstate commerce and those who acquire, own

(Continued on page 101)

Air-Travel Sales System Employed By Aeronautical Accessory Company



GORDON VERRIER of Long Beach, Cal. (about to enter plane with briefcase), has made one-third more business calls with his light plane than he could have made by any other means of travel in his West Coast territory for Breeze Corporations, aeronau-

tical accessories manufacturers. Light plane is equipped with Breeze accessories, providing perfect exhibit of products under actual flying conditions. Plane also saves time and increases speed of service calls on customers many miles apart. (Edward Lubischer, a friend, is at left).

POSTWAR expectations of air-traveling salesmen calling on their customers via their own light planes have been thoroughly tested by Breeze Corporations, Inc., of Newark, N. J., and proved highly practical.

A West Coast service engineer for the company, which specializes in the manufacture of aeronautical accessories, has completed four months of private air travel on his routine calls. The experiment was studied by trade interests and companies outside the

field and has more than justified the industry's hopes, according to Joseph F. Lucas, Breeze vice president.

Gordon Verrier of Long Beach, Cal., is the service engineer-pilot. He flies a small, two-seater cabin plane which cruises at 90 mph. His home hangar is at Compton, Cal. Business takes him regularly to many naval air stations and army air bases within a 200-mile radius, and frequently on much longer trips. On short trips, he

(Continued on page 102)

Air Cargo and Public Warehousing

Public warehousemen need not worry about air cargo reducing their usefulness. What they should do is to watch for opportunities to fit air cargo into their own and their clients' activities. In this manner public warehouses can become an adjunct to air as they have to other forms of transportation.

By JOHN H. FREDERICK
Air Cargo Editor

AIR cargo is here! No longer is it something "likely to develop" in future years but not to be reckoned with today. Moreover, air cargo and its use by shippers and receivers will affect all other agencies of transportation to a greater or less degree. Since they are a very important adjunct to existing agencies of transportation, public warehousemen have been interested in keeping abreast of air cargo developments from the very first. This *DandW* has done for its readers. It is now time to appraise the situation in the light of recent air cargo developments to see where public warehouses fit into the picture.

One way to appraise the situation is to look at the reasons why manufacturers and other distributors use public warehouses. Why is storage space not always provided at factories or at branch storerooms at marketing centers? The reasons for using public warehouses may be summarized as follows:

1. To reduce investment in storage space. When public warehouses are used instead of buying or renting individual buildings, or parts of buildings and maintaining individual warehousing organizations the following advantages accrue to the storer:

(a) There is no need to enter into long-term leases or permanent real estate investments. (b) There is no need to maintain the premises used for storage. (c) There are no real estate taxes to pay on storage space. (d) There is no payroll for warehouse employees. (e) No management of the warehouse is involved. (f) There is the opportunity to expand storage requirements at peak seasons with a minimum capital investment and at minimum expense.

Besides using public warehouses at strategic marketing centers throughout the country for carrying spot stocks many manufacturers and others use them in their own home towns to carry stocks of raw materials and finished goods when factory storage space is full or needed for other oper-

ations. Certainly, there is nothing in the potentialities of air cargo likely to change this reason for the use of public warehouses or to decrease the amount of goods carried with them by storers who wish to lessen their own investments in warehouse space.

2. Public warehouse receipts help in financing. Many storers use public warehouse receipts covering finished products or certain raw materials to finance manufacturing or other operations. The services of public warehouses in financing the distribution of goods have always been important and surely will not become less important as time goes on, despite any new methods of transporting these goods that may be developed. There will always be a period between the time goods leave the production line until they reach the first point of effective consumption. During this lapse of time they will require financing.

The financing services of public warehouses will not only be made use of by manufacturers but by the distributors of goods such as whole-

salers, manufacturers' agents and the others. From the standpoint both of storers and bankers, warehouse receipts, when issued by public warehouses, possess the following advantages as collateral: (a) They may be used as the basis of bankers' acceptances. (b) They may be negotiable or non-negotiable as desired. (c) They provide for independent custodianship of the goods. (d) They clearly define the liability of the warehouseman. (e) They are standard and recognized credit instruments. (f) They have a strong legal and financial backing.

3. To save on storage expenses. Manufacturers with national distribution have long realized that delivery is a very important part of selling. For this reason, many of them keep spot stocks of their products as close to customers as they can. The amount of goods comprising each of these stocks varies from season to season, or from month to month. Public warehouses are able to take care of varying demands for space, from their various clients, because they handle such a large variety of goods that the space and service not required by one client may be offset by the demands of another.

Public warehouses quote their rates for storage and handling by the unit, or package, or on the weight of the goods handled, depending upon individual circumstances. The factory branch storeroom or private warehouse cannot do business on this unit basis because its overhead expenses bear little relation to the volume of goods handled. Storing goods in public warehouses makes it possible to figure handling costs on the same unit basis as in manufacturing and selling. Moreover, this basis is predetermined by the warehouse contract, which gives a specific quotation for storing, handling and for each item of service required.

A private warehouse or storeroom is unable to quote costs with such accuracy unless maintained by a manufacturer whose volume is large and fairly well spread out over the year. In fact, the cost of storing in private warehouses or agency storerooms can seldom be ascertained until after the close of the month, or other fiscal period, when all items of expense have been reported; the cost per unit vary-



Your Future rides in the Air!

TEST NOW AND PLAN NOW
FOR POSTWAR USE OF

AIRFREIGHT

Air shipping will be an integral part of American enterprise after the war. Since Pearl Harbor, air transport on a vast scale, of almost every conceivable kind of cargo, has become commonplace with our armed forces. Foresighted business men already have taken stock of their shipping policies in the light of air transportation's exclusive and unprecedented advantages. They are not merely comparing point-to-point charges. They are studying new marketing and merchandising opportunities made possible only by air transportation.

AIRFREIGHT TO MEXICO is available in connection with American Airlines' International Air Express

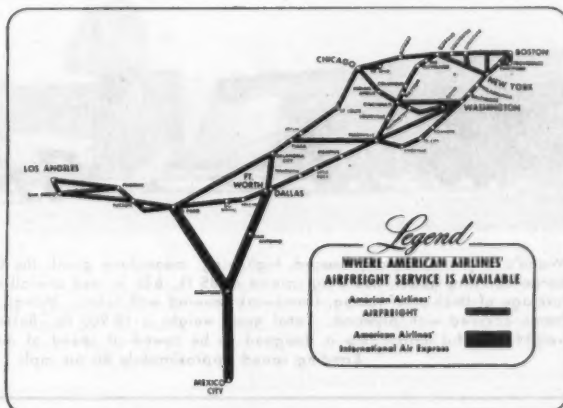
AMERICAN AIRLINES Inc.

THE NATIONAL AND INTERNATIONAL ROUTE OF THE FLAGSHIPS

American Airlines' Airfreight is a preview of the air shipping future. Its operation enables shippers to plan and test their postwar markets, methods and possibilities for profit. This low-cost air service is now available, although government priorities naturally get right-of-way.

To help you make Airfreight work for *you*, American has set up a staff of sales engineers and research experts. They're at your service.

Write NOW to American Airlines' Airfreight Division, 100 East 42nd Street, New York 17, N. Y.



ing with the volume of business and being far from constant.

Manufacturers who do any storing at all, particularly if away from the factory, recognize the adaptability of public warehouses to large or small storage needs and the consequent assistance such flexibility gives in the figuring of unit distribution costs. This may well be the deciding factor for many manufacturers in continuing to maintain their stocks in public rather than in private space, even at the factory.

It has been suggested that manufacturers in many lines will carry fewer spot stocks scattered over the country in the future, particularly when air cargo rates are lowered; but instead, and because of this faster transportation being available, will make all shipments directly from the factory.

This may be the case for certain types of style merchandise but this theory ignores the size of individual shipments and the savings always possible from shipping in larger quantities. Most of the products heretofore carried in largest volume by public warehouses will not be subject to the style influence so will continue to be shipped in the largest unit quantities possible and carried in stock as close to the consumer as possible; thus reducing the length of haul for the smaller units at the higher small-quantity rate whether by rail, motor or air.

4. To avoid consigning stocks. Consignment selling is a method used extensively in the past, and quite likely to be used again just as widely, whereby manufacturers placed their goods in wholesaler and retailer stocks without the latter actually tying up capital in inventories. What consignment selling really means is that the manufacturer ships the goods to the consignee to be charged to him,

and paid for, if he sells them. Otherwise the goods are to be returned to the shipper eventually.

Numerous manufacturers avoided the risks of consignment selling, in the past, by placing spot stocks of their goods in public warehouses, from which deliveries were made to customers either on a c.o.d. or accredited list basis. These and other manufacturers will follow this same method when sales of consumer goods again bulk large. They will do so because of the following advantages to a manufacturer using such a system:

(a) His market will always be supplied with goods placed at their approximate sales destination before the sale is made to the retailer or wholesaler. (b) Dealers will always have goods on hand or easily obtainable within a few hours; preventing their being out of stock. This is the chief way a manufacturer can avoid loss of sales through substitutions. (c) There will be no need to consign stocks to dealers with consequent risks of loss to the manufacturer. (d) Large open accounts will be avoided as dealers obtain the goods when they want them

SIX SUGGESTIONS

PUBLIC warehouses can become adjuncts to air as they have to other forms of transportation by:

1. Handling pick-up, delivery and consolidation services for the airlines.
2. Operating airport warehousing facilities on lease or contract basis.
3. Developing packing and re-packing services.
4. Supplying bonded warehouse services at ports of entry for international air transportation, at inland as well as at coastal points.
5. Warehousing the airlines' own stocks of supplies.
6. Arranging with airlines to take over shipments sent on an airport-to-airport rate basis for storage after expiration of "free time."

for immediate resale; thus promoting dealer and manufacturer stock-turnover, both equally important. (e) Manufacturers will have definite and absolute control over their sales because orders will come to the public warehouses and stocks therein be depleted only as the goods are sold by the dealers, not on their estimates as to possible future demand.

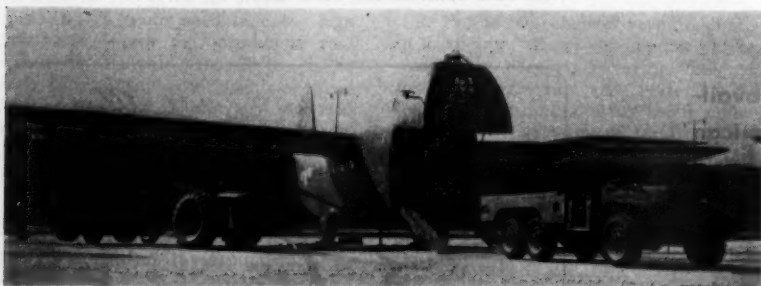
5. To reduce costs of transportation. The use of public warehouses is often an important step toward reducing costs in distribution. Savings are largely based on two things: (a) The spread between carload and less-than-carload freight rates. (b) The spread between through freight rates and the combination of two or more local rates. It often happens that when several shipments are pooled into one carload, and shipped to a public warehouse for distribution or re-shipping in less-than-carload lots, by rail, truck or air, the savings in transportation costs, as compared with making the small shipments individually from the factory, pay all costs of transportation, all costs of handling for re-shipping locally, all costs of distribution except selling and still leave something as "profit."

Other savings are obtained in connection with the storage in transit service of the railroads, which permit the stoppage of a shipment somewhere along its route without sacrificing the through railroad rate in effect from the point of origin to final destination. Using this privilege and in order to facilitate the marketing of his goods the producer may store them at convenient transit points for later shipment to markets. It is unlikely that in-transit privileges of this nature will be provided in connection with air cargo transportation for a long time, if ever. Here the essence will be speed of direct, through movement.

Warehousemen, may, therefore, expect to continue as a very important adjunct to rail, motor and water transportation and to a continuance of their pool car distribution business for products which it will always be more profitable to ship for long distances.

(Continued on page 59)

Cargo Glider



Waco's largest externally braced, high wing, monoplane giant, the CG-13A, a 42 man and cargo carrying glider, has wing spread of 85 ft., 6 3/4 in. and overall length of 54 ft., 2 1/4 in.; fuselage of thick steel tubing, framework covered with fabric. Wings, tail surfaces are wood-frame covered with plywood. Total gross weight is 18,900 lb. Better than 10,000 lb. total weight is useful load. Ship is designed to be towed at speed of not more than 175 mph. Landing speed approximately 80 air mph.

Reduced Valuation And Insurance Charges

Substantial reductions in valuation charges and in premiums of all risk insurance, except legal seizure and war risk, approximately 8 per cent and 17 per cent, respectively, have been announced by Pan American World Airways, effective March 1. Panagra (Pan American-Grace) also will put these charges into effect March 1.

The lowered valuation charges, assessed against all shipments as part of the transportation charge and figured on the basis of distance carried, will allow savings of from two to three cents per \$100, it is stated.

The insurance premiums, available for all Clipper express commodities excepting livestock, perishables and radio and X-ray tubes under Pan American's Shipper's Open Policy, are likewise assessed on the basis of distance carried. Divided into two categories, general cargo and valuable cargo insurance, the premium reductions will also range from two to three cents per \$100.

5% Discount On Air Tickets

American Airlines will establish a 5 per cent discount on passenger tickets purchased under its famous Air Travel Plan effective March 25. At the same time the company will allow a similar discount to employees of the United States Government purchasing tickets with Government Transportation Requests (Form 1030), according to an announcement made last month.

United Air Lines has also announced that it has asked to make March 25 the effective date for 5 per cent discounts on tickets purchased by air travel card holders and by U. S. government employees traveling on official government business.

New Cargo Flights Started by TWA

Two new all-cargo flights between Chicago and the Pacific Coast were inaugurated Feb. 15 by TWA to meet rising demands for fast delivery of wartime mail and express.

The new flights will be operated in addition to TWA's present all-cargo service which consists of a transcontinental round-trip between New York and Los Angeles daily except Monday and a round-trip between New York and Chicago daily except Sunday and Monday, E. O. Cocke, vice president, traffic, stated.

CAB Application Withdrawn

American President Lines has withdrawn its CAB application for establishment of an air service to the Far East, pending a clarification of government policy with respect to operation of overseas airlines by steamship companies.



Reg. U. S. Pat. Off.

Air Cargo Still Faces Many Tests UFFVA Told at Chicago Meeting

Many tough problems remain to be solved before the business of shipping perishables by air can reach a sound footing, Dr. Spencer A. Larsen, director of air cargo research at Wayne University, Detroit, Mich., declared, in addressing an air cargo conference during the recent Chicago convention of the United Fresh Fruit & Vegetable Assn. Participating in the discussion were representatives of air freight research agencies, commercial air lines, aircraft manufac-

(1) Of relatively high market value to prevent the cost of transportation from being an unreasonably large part of the retail price.

(2) Either so perishable that it is not ordinarily marketed from point of production; or an item which, through field-ripening, shows marked superiority over the same product picked green and transported by ordinary methods.

(3) Of high, uniform quality, attractively packaged, shipped when ab-



SUN-RIPENED VEGETABLES flown experimentally via United Air Lines Cargoliner from California to the recent United Fresh Fruit and Vegetable Assn. convention at Chicago, Ill., received the stamp of approval from officials of the UFFVA at United's display. From left, they are: Glenn Phillips, vice chairman, air cargo section; William Garfitt, executive vice president; Ralph Myers, chairman, air cargo section; Anthony Zulfer, president of the UFFVA.

turers, the container industry and the produce men.

Most of all, Dr. Larsen warned against random shipment of commodities unable to benefit sufficiently to compensate for the added cost.

"Any lack of responsibility on this score by growers, airlines and distributors, he said, would not only be poor business practice but would make dupes of American consumers."

Research initiated last June by Wayne University, with the cooperation of United Air Lines and the A. & P. Food Stores, has established that a commodity suited to successful air shipment should have four characteristics. They should be, said Dr. Larsen:

olutely fresh and conspicuously identified as airborne.

(4) Sufficiently commonplace to permit the public to appreciate superior quality.

Dr. Larsen reviewed a series of tests in which California tomatoes, shipped by rail, were compared with others picked when ripe from the same vines and shipped by air. Superiority of the airborne tomatoes as graded by several standards [and fully reported in *DandW* last November, (p.49)] indicated, he declared that "40 per cent of out-of-season tomatoes, shipped into a metropolitan market could bear an air cargo rate of 10c. a ton-mile."

Experimental commercial shipments

are continuing, Dr. Larsen said, but problems still to be met can only be solved by continued cooperation between air lines, growers, shippers and distributors. Rewards, he said, "will not lie in profits alone, but also in an opportunity for genuine public service in terms of improved health and better living for the American people."

J. Prescott Blount, manager of perishable shipments for United Air Lines, assured the produce men that "we're in there to stay and will follow through," while others on the panel

discussed produce suitable for air transport, rates, ground handling equipment, packaging, plane design and other phases of the project. And after admitting that "Every fact of which they were positive has turned out not to be a fact at all," J. A. Wooten, cargo traffic manager of American Airlines, challenged the produce men with the question, "Do you expect us to do this distribution job for you as your grandfathers did it?" (Slawson)

Streamlined Distribution in Postwar Era Predicted Through Use of Air Transport

Air Transportation of merchandise from manufacturing plants located at raw materials sources directly to retail outlets stocked only with samples, is one of several schemes for streamlining postwar distribution through use of air cargo visualized in February SAE Journal.

J. A. Wooten of American Airlines, Inc., says that new air cargo planes, packaging methods, and handling operations effectively can make air transportation's inherent advantage of speed useful to business.

"Give us a plane that can be placed against the platform so that the loading operation can be continuous, allowing us to cut these surface costs at least to the level of our competition," he explains. "On many items it is possible to move the plant away from consuming centers, such as New York or Chicago, and to put the plant on top of the source of basic material. Through the use of air transportation we can serve the United States as a market satisfactorily from a given point.

"Antiquated equipment" is said by Mr. Wooten to be the major barrier to

Warehouse Purchased

Gimbel Bros. store, Philadelphia, Pa., has announced purchase of a warehouse there as the latest development in its postwar helicopter delivery plan.

Facilities will be set up on the store roof for the landing of helicopters, which will carry merchandise from the warehouse.

Three autogiro firms have contracted with Gimbel's for postwar delivery of six helicopters.

creating added values for merchandise moved by air.

"The passion fruit in Orange County, Cal.," he reports, "is worth \$4 per ton. In New York City it is worth \$700 per ton. For every perishable fruit or vegetable, there is a perishable manufactured commodity as well."

Mr. Wooten suggests air transportation rates of 15c. per ton mile as adequate for magazines and style merchandise.

Lower Publication Rates for Air Express

Drastic reductions in air express rates on magazines and newspapers, flown from Boise, Idaho, Cheyenne, Wyo., Salt Lake City, Utah, and Denver, Colo., to a number of western points by way of United Air Lines, have been announced by Air Express Division, Railway Express Agency.

Also, Braniff Airways, as of Feb. 1, put into effect a 30 per cent reduction on domestic air express rates on newspapers, magazines, and other periodicals. The announcement made by Guy M. Springer, Jr., air mail and air cargo traffic manager, said the new rates apply to all cities on the Braniff system from Chicago, Ill., Kansas City, Mo., Dallas, Fort Worth, Houston, Tex., and Denver, Colo., and are published by Air Division, Railway Express Agency as an experiment to determine what volume of traffic may be developed at lower cost to the shipper. The tariff as filed will expire May 1, 1945, although it is subject to cancellation, change, or extension.

Airfreighter Aisles Carry Cargo

Effective since early in January, American Airlines is now carrying restricted types of cargo in the aisles of Airfreighter cabins.

Purpose, as explained by J. Stuart Riordon, central cargo traffic manager, is to enable American to carry long, tubular or slender shipments which are too long for compartments or bags.

Certain regulations have been established under which freight suitable for this classification will be considered. (Slawson)

Trans Canadian Line Opens New Route

With inauguration of a third transcontinental flight between Montreal and Vancouver, effective Feb. 1, Trans-Canada Air Lines has announced an increase in transcontinental passenger accommodation of 100 per cent.

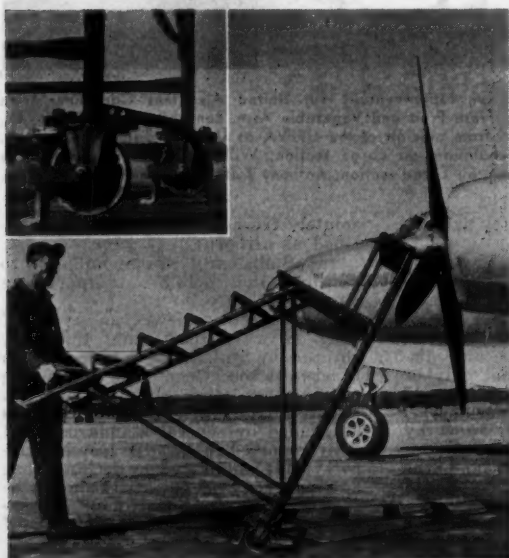
More space will be provided by use of 14-passenger Lodestar aircraft in this service.

Additional crews are made available by rehabilitation of Royal Canadian Air Force personnel who have completed tours of operations overseas.

CAB Application Made by Oceanic Co.

Oceanic Steamship Co., San Francisco, Cal., filed an application with CAB for an air service in co-ordination with regular steamship services between the Pacific Coast and Australia, via Honolulu.

The company proposed an air service from the co-terminals of San Francisco and Los Angeles, Cal., through Honolulu, Palmyra, American Samoa, Fiji and Auckland, N. Z., to Sydney, Australia. (Herr)



NEW SAFETY LADDER designed by engineers, Glenn L. Martin Co., Baltimore, Md., for safeguarding ground test and flight line mechanics against the old "creeping ladder" hazard, is of conventional metal stepladder design with wheels on two back legs to permit easy movement. Safety of new ladder is provided by metal brackets rigidly attached to back legs just in front of wheels and extending beyond the wheels lifting them off the ground when the ladder is in upright or working position. When front of ladder is picked up, it rolls back on the wheels and is easily moved about.

“Am I glad I've had a
Job-Rated Truck during
this war!”

Writes JOE E. PATTON
ALBERT LEA, MINNESOTA



BUY WAR BONDS

"This Dodge has been driven about 425,000 miles, and is still going practically night and day hauling buttermilk to the local milk-drying plant, where it's processed for shipment overseas," writes Joe E. Patton of Albert Lea, Minnesota.

"This work demands being on time all the time, and this truck has given me top record. Am I glad I've had a Job-Rated truck during this war!

"I've other trucks, but this Dodge has

done the best job at the lowest cost, and I hope and believe it will carry on for another 300,000 miles!"

If YOU want this kind of long and economical service—let your Dodge dealer take care of your trucks! Depend on the "know-how" of his expert mechanics, on readily available factory-engineered parts. Make your Dodge dealer's shop your "truck headquarters!"

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Dodge is building new 1½ and 2-ton trucks, in limited quantities, for essential use. See your Dodge dealer for the right Job-Rated truck to fit your job—save you money!

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Keep going with
DODGE DEALERS'
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DODGE Job-Rated TRUCKS

TRUCKS ARE HELPING MIGHTILY TO WIN THE WAR!

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D and W, March, 1945—31

Packaging for Export . . . By Air

In more than 80% of the repackaging operations at the Atlantic Overseas Air Technical Service Command the cargo is repacked in a wooden container. In 18 lots handled for repack in a given day only one went out the same size as received. All others were reduced from 20% to 75%.

By CAPT. CHAS. L. SAPERSTEIN

*Packaging Control Officer
Atlantic Overseas Air Technical
Service Command*

• • •

RECENTLY, the New York Times, commenting editorially concerning post war air cargo, mentioned the achievement of a trip-hammer flown from New York, to India, weighing some 4,000 lb. The story behind this story was one of packaging. When this vitally-needed piece of equipment was offered originally for air transportation, it weighed over 7,000 lb. which exceeded the plane limitation. Also its size was too great to clear the plane door.

Out at Newark Army Air Field, however, Headquarters of Atlantic Overseas Air Technical Service Command, there is a group of packaging experts who for nearly two years have pioneered in the field of packaging for air export. The Commander, Brig. Gen. William E. Farthing, has given every encouragement to this project with the result that literally hundreds of tons of excess weight have been done away with entirely.

Screened for Overpacking

All air cargo passing through the Newark Field, destined for overseas, is screened for evidence of overpacking. That much knowledge on the subject is needed in packing departments generally is evident when it is pointed out that all of this freight was forwarded originally in the knowledge that it would go overseas by air.

Consequently, when the Air Transport Command requested help with the trip-hammer, no great problem was presented. By planning a less massive, but adequate base; by disassembling the removable parts, by

judicious use of 2 in. metal strapping and $\frac{5}{8}$ in. cable lashings instead of 6 x 8 beams, some 3,000 lb. were removed and the item became suitable for air shipment.

Some Examples

Proportionately, the experience with the trip-hammer is no different than that repeated many times daily. As I look at typical work reports for the Packing Shop, I see such pictures as these:

Two cases arrived weighing 270 lb.; were shipped out at 167 lb. Four cases were received totalling 325 lb.; after repacking the weight was 236 lb. Another of 261 lb. was reduced to 181 lb. A lot of 26 cases arrived

weighing 4,488 lb. and were reduced to 3,261 lb. Another lot of 22 cases which arrived weighing 1,516 lb. was moved out weighing 1,116 lb.

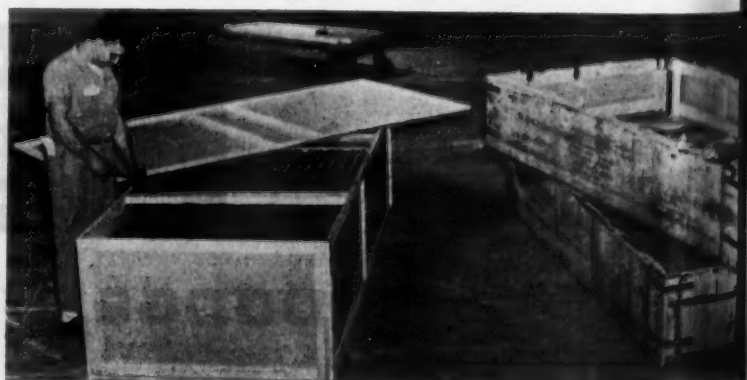
These are routine experiences, the changes being neither unusually large or small. The most fantastic in the same period were the following four jobs: Seven cases came in weighing 1,374 lb. and went out weighing 600 lb. Three cases were reduced from 210 lb. to 52 lb. Three cases weighing 561 lb. when received were flown out weighing only 258 lb. Finally, 20 containers weighing 2,086 lb. were adequately repacked at total weight of 640 lb.

80% Repacked

In a few instances it is possible to repack freight from nailed wood containers to waterproof paperboard (V-Board). However, in more than 80 per cent of the repackaging operation the cargo is repacked in a wooden container. Savings in weight come about partly in using $\frac{1}{4}$ in. or $\frac{3}{16}$ in. plywood sides in place of 1-in. tongue-and-groove, but chiefly through studies to reduce the overall size of the container. In 18 lots handled for repack in a given day only one went out the same size as received. All others were reduced from 20 per cent to as high as 75 per cent.

Some will point out it is impossible to secure readily quantities of plywood or V-Board with which to fabricate less weighty containers. Practically the same economies in weight

MIRACLES OF PLYWOOD . . . The two containers to the right together with their cargo were offered for export air flight, total weight 1,540 lb. Repacked into one plywood container, adequately braced, total weight was 578 lb. Displacement of original cases 150 cu. ft. Container as shipped 97.4 cu. ft.



Unit loads + Exide power equals low cost handling

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Electric industrial trucks are exceptionally well suited for unit load handling. And when powered by Exide Batteries, maximum economy and efficiency are assured. Exides have ample reserves to meet the higher power requirements, and to keep trucks moving at sustained speeds throughout the day. You can always count on Exides for dependability, long-life and ease of maintenance.

Write us for a FREE copy of the bulletin "Unit Loads," prepared by The Electric Industrial Truck Association. It tells how to cut handling costs up to 50%... covers latest developments in materials handling... and includes actual case histories.



Exide BATTERIES

THE ELECTRIC STORAGE BATTERY COMPANY, Philadelphia 24
Exide Batteries of Canada, Limited, Toronto

are obtainable with ordinary box lumber, providing it is dressed down to thicknesses no greater than absolutely necessary for protection. The box-makers in many packaging departments come to adhere to certain standards, perhaps all one inch sides and 4 in. battens.

For air export a small amount of lumber should be planed down to $\frac{1}{2}$ in or $\frac{3}{4}$ in. with battens to $2\frac{1}{2}$ in. Every container should be tailor-made to order, with everyone making a fetish of saving even a single ounce.

Substantial Cost Savings

All of the work in connection with special packaging for air export involved in the 18 lots referred to cost but a few hundred dollars in materials and labor. The savings in flight tariffs, however, would amount to \$4,000 for each \$100 so expended. And more important, for military purposes it released air cargo space for additional critically needed supplies.

In the postwar period, proper packaging may be the difference between the successful employment of air transportation for export or the

inability of commerce to use this new international freight carrier.

How can it be that there is so much misunderstanding in the realm of packaging for air export, when there has been so much progress in the field of packaging for domestic air transportation? The airlines, air express, container manufacturers and others, backed up by air-minded trade papers, have done a magnificent educational job. And even if this had not been done, tariff rates almost compel progress in air packaging techniques.

Bugaboo of Tradition

Obviously, the answer is in the bugaboos and traditions which surround the packer's thinking once there is mentioned, "export-pack." For so many years, packing for export has been synonymous with water-borne freight, that the concept and possibilities of exporting-by-air seems to be slower in taking root.

Naturally, overseas air transportation will require slightly more consideration than purely domestic air-flight. The consideration of additional handlings at transfer points; the consideration of repeated tie-

downs; the consideration of adequate corrosion prevention (humidity changing to moisture due to sudden changes of temperature); finally, the consideration of container standing up in domestic handling after reaching country of destination. But all of these together do not put packaging for air export in the same class as for water.

Factors to Consider

First factor in planning your air export package is security and protection to the contents. Unlike water freight, however, this does not mean ability to withstand considerable stacking. The cargo plane can plan its load to give top stowage to lightly packed items or open freight which lends itself to no containers whatever.

The second factor is keeping total weight to the irreducible minimum consistent with the factor of safety. The entire economics of air transportation is wrapped in this factor.

A concern that seeks to supply its distributors at Madrid, Sydney or Rio by air and keeps packaging to less than 5 per cent of the total weight will find it profitable to do so a long time especially if its competitor adds an extra 20 per cent for unnecessary packaging. That is simple arithmetic.

The third factor is the one concerning excess cubage. Most manufacturers will say their containers are packed solid and hence, no cube can be saved. Yet, as mentioned, out of 18 lots of cargo, 17 had its cube reduced when a set of experts gathered around and said, "Let's see, how can we make this less heavy, less bulky?"

Down, Down, Down!

There is little source material to help. I can only advise, bring your qualified packers together, and if you want, make a game of your problem. Let every one start suggesting ways and means of bringing weight and size, down, down, down! One has an idea on lessening weight of box; another, for less interior bracing; a third, will point out how by merging the inner packs the entire case can be made smaller.

Successful packaging for air export will be an essential accomplishment of every container department of the future. After reviewing thousands of containers selected by manufacturers and military installations as suitable for air export, I strongly urge all ideas which have grown up around water export be thrown out of the window. Even the bird soaring aloft has been provided by nature with adequate protection. You too, in the postwar period, can put wings to your export shipments. But be sure your cargo is also adequately protected and in feather-weight packages, or your export products, like penguins, will be just so many sitting ducks for your sharpshooting competitors.

THE MESSAGE ON THE LID tells the story . . . The shipper of these jars of acid used 173 lb. and 16 cube to prepare his shipment for air export. A plywood container (shown inside the original container) gave adequate protection and reduced shipment to 95 lb. and to less than 5 cube.



Pallet Standards and Pools

Meeting called by National Bureau of Standards carries forward plans for simplification and standardization of pallets and skids; for wider use of palletized unit loads in all industries and proposes standard heights and sizes for boxcars.

Called and presided over by W. E. Braithwaite, Division of Simplified Practice, National Bureau of Standards, a committee meeting was held at the Drake Hotel, Chicago, Jan. 22, for discussion of the use of pallets and simplification of their dimensions.

Present at the meeting were:

C. R. Anderson, Assn. of American Railroads, New York; S. T. Cemar, Schenck-Manville Corp., New York; A. L. Griffin, H. A. Johnson Co., Boston; E. J. Reimer, Barrett-Cravens Co., Chicago; F. F. Henning, Assn. American Railroads, Chicago; H. R. Kramp, National Trucking Assns., Inc., Washington; A. A. March, Yale & Towne Mfg. Co., Chicago; J. O. E. Marshall, Assn. of American Railroads, Chicago; W. S. McCann, Electric Industrial Truck Assn., Chicago; E. W. McDonnell, Economy Engineering Co., Chicago; Galen McKinney, Naples-Platter Co., Fort Worth; M. H. Merrole, Bureau of Foreign & Domestic Commerce, Washington; A. C. Neslund, Jewel Tea Co., Chicago; J. W. Oxley, Assn. of American Railroads, Chicago; George A. Ramlose, industrial engineer, Boston; J. Stanley Seeman, Seeman Bros., Inc., New York; W. T. Sheldon, U. S. Navy; Wm. R. Thele, Sprague Warner Kenny Corp., Chicago; J. C. Horton, distribution engineer, Chicago; Harvey Trimkey, McClintock Trimkey, Spokane; Chas. C. Welker, West Coast Lumber Co., Tacoma; W. F. Zutler, Remode Steel Strapping Co., Brooklyn, N. Y.; W. E. Braithwaite, Nat'l Bureau of Standards, Division of Simplified Practice, Washington; Alvin Hertwig, Nat'l Bureau of Standards, Division of Simplified Practice, Washington.

The Navy representative presented an excellent film showing the economies and speed of handling accomplished by palletization. The consensus of members in attendance was that a substantial part of the benefits realized in the Navy's experience could likewise accrue to industry through adoption of similar methods. Matters emphasized by Lt. Sheldon were the importance of the type of container construction as a factor of safety against damage and pilfering, and the adaptation of packaging and palletizing to the dimensions of box cars rather than the number of contained units, hence also the standardization of car dimensions by the railroads. A member of the industry directed attention to the need of a uniform height of car floors above the tracks as well as reduction in number of car sizes. (See *DandW*, Feb., 1945, p. 36.)

Pallet Pools

A major subject for consideration

is the method of handling the accumulation of pallets at their destination. (See *DandW*, Jan., 1945, p. 63.) Suggested methods include organization of a pool or clearing house, development by the railroads of a way to dead-head the pallets back to point of origin, or construction of a pallet so cheap that its cost could be absorbed as a package or shipping charge. An industrial engineer present stated that there is a paper pallet costing only 10c., practical for some uses. The cheapest commercial pallet now in use costs about \$1.45.

The ultimate gains from pallet-handling of goods are so real and substantial, it was stated, that obstacles to its acceptance must be met by a positive attitude. At the same time a process of evolution rather than an overnight development is likely. There should be no avoidable delay in steps toward standardization, it was pointed out, inasmuch as a policy of hesitancy among members of industry in streamlining their handling methods will be dictated by wisdom until such expected standardization arrives.

The Division of Simplified Practice was commended for its studies and efforts, and encouraged both to standardize pallets and to promote their widespread use among all interested industries.

Committees Proposed

It was voted unanimously that the Department of Commerce proceed with the appointment of appropriate committees for the consideration of standardizing skids and pallets and promoting their use to simplify handling and reduce costs in the distribution of foods and other products.

Committees are accordingly to be named (1) for transportation facilities; (2) materials handling, (3) food processing, and (4) food distribution. It is thought that committees for other groups will later be added and that out of all will evolve a permanent committee.

The representatives in attendance were so interested and the discussion so spirited that the meeting, which was expected to close at noon, reconvened in the afternoon, not to adjourn until past 5 o'clock, after expressing a desire for another meeting in the early future in Washington.

Businessmen Urged to Become Familiar With Details of Surplus Property Act

BUSINESSMEN were urged to become familiar with the Surplus Property Act by a member of the U. S. Treasury's procurement division staff, E. P. Phillips, in addressing the Association Equipment Distributors at their recent convention in Chicago. By doing so, he said, business will acquire a better understanding of how the job of disposing of surplus war materials must be done.

Outlining the government's program, Mr. Phillips stated that a major policy of the Procurement Division will be to "sell through the regular channels of trade."

Speaking of the farm machinery and construction equipment, of which he said, "Up to this time we have not sold direct to consumers, except where distributors first failed to bid on equipment offered them. It has been our thought that any attempt

to set the government up in the retail business on a national scale would be inefficient and uneconomical.

"We believe that consumers can best be served by purchasing from their distributors or dealers who have the facilities to rebuild and service the equipment for consumer use, as most of our equipment is not ready for use without proper repair and service."

The policy, he declared, will be to sell to manufacturer, dealer or distributor, which will result in: "(1) The best interest of our war program; (2) The most equitable distribution, geographically, and according to need; (3) Speediest distribution to the extent that speed is important; (4) Highest returns to the government, considering other pertinent factors; (5) Most satisfactory service to the consuming public." (Slawson)

Increased Use of Pallets and Their Standardization

There doesn't seem to be any good reason why many industries cannot adopt palletized unit loads, especially when the contents are of such a nature as to "fit the container which fits the pallet which fits the boxcar." All that are required are the fork trucks, a supply of pallets and the courage to revise container and package sizes and container handling methods.

HOW to improve the packing, handling and transport of commodities is a matter of primary importance to all manufacturers and distributors. Since most manufactured products require some form of package or container, the best method of packing and the best type of package for a particular product constitutes one of the fundamentals of economical and efficient distribution and merchandising.

In the selection of containers for the shipping of almost any commodity, there are at least two principal factors to be considered. First, there is the specific requirement of procuring an inexpensive yet adequate container which will insure the protection and safe delivery of the product. With this objective accomplished, some manufacturers are content to stop. From the user's or consumer's point of view, however, there is the further problem of the best dimensions, sizes and capacities, the most easily handled types of containers, and the most satisfactory number of units as well as protection to be considered.

Importance of Packing

Many nationally known companies have gone into packaging problems very thoroughly and have employed competent men to study this important phase of their production cycle. They realize that if the packing room is the bottleneck of their plant it may affect their entire business. Those who are fully aware of the true situa-

By **WILLIAM E. BRAITHWAITE**
*Assistant Chief Business Specialist
Division of Simplified Practice
National Bureau of Standards
U. S. Department of Commerce*

o o o

EDITOR'S NOTE: This is part of a paper presented before a recent meeting of the National-American Wholesale Grocers' Assn. at Chicago.

tion have been making specifications for containers and packing an integral part of their production orders to assure themselves that their product will arrive safely, and thereby prevent costly delay and possible loss.

For a number of years the U. S. Department of Commerce, through the Transportation Division of the Bureau of Foreign and Domestic Commerce, continually stressed the importance of adequate packing of merchandise for export and endeavored to acquaint shippers with the best accepted practices. Improvements in packing for export and the consequent reduction in the losses formerly incurred led to similar measures for needed improvements in domestic shipments.

Coincident with the movement for reduced distribution costs through simplified packing, there developed a widespread and systematic effort to simplify sizes and types of containers and packages. The Division of Simplified Practice, set up in the National Bureau of Standards over 20

years ago, has served as a clearing house or central agency through which manufacturer, distributor and consumer groups could cooperate in a nationwide program for avoiding the waste formerly caused by a needless variety in sizes, types, dimensions, models, patterns, or "line numbers" of commodities. The immediate objective has been to abandon all odd and unnecessary items and concentrate upon a simplified line that will meet all requirements without clogging the machinery of distribution, and slowing down the rate of turnover.

200 Recommendations

More than 200 simplified practice recommendations, which have been developed by the industries concerned and promulgated under the cooperative procedure of the Division, are records of retained items or variations considered adequate for normal demands. Many of these 200 simplified practice recommendations are for food containers and food packages.

In the interest of coordination and consequent economy, each step in the handling of a product should be considered both independently and with respect to related steps, beginning with the unit package, or primary container, in which the product is packed by the manufacturer, through the shipping container, the method of handling, and finally the best means of transportation to reach the ultimate consumer.

Excessive variety in the sizes and

shapes of the primary (consumer) unit makes it necessary to manufacture the secondary and the shipping containers in an enormous variety of sizes and shapes. The shipping container is usually handled more often than the unit package, and, for this reason, should be given at least as much consideration. The size of the shipping container is dependent not only upon the size of the unit package and the number of units in the container, but also upon the method of transportation and the amount of handling to which it is subjected.

A Postwar Necessity

Distribution specialists in the Bureau of Foreign and Domestic Commerce have been convinced for some time that streamlined operations in wholesaling and retailing are a postwar necessity.

Most of you are familiar with the comprehensive field survey recently conducted by that Bureau, the results of which have already been discussed by other speakers on this program. In this report is added another link to the long chain of efforts made by the Department of Commerce to help distributors by reporting new techniques designed to eliminate some of the unnecessary handlings in warehouses, and thereby reduce operating costs.

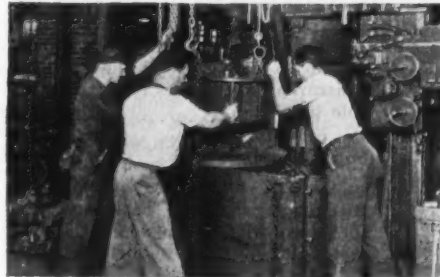
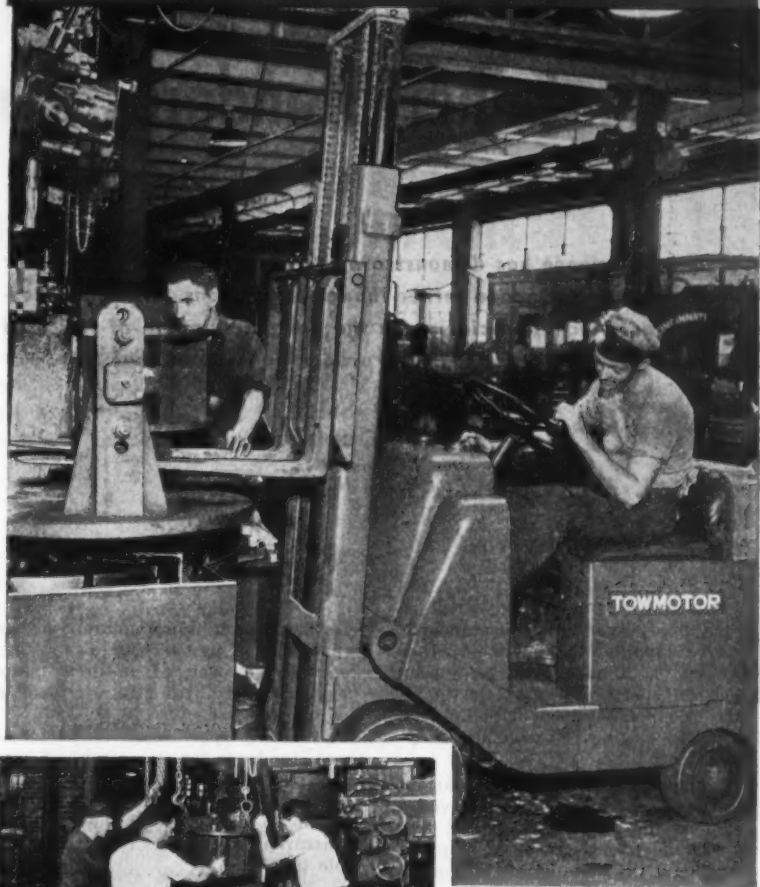
The general acceptance and use of punch-cards and the skid system made profitable the establishment of the assembly line. By this method of operation, order processes were speeded up but an additional cost was created in moving goods from the reserves to the assembly line. Though this method was an acknowledged improvement over previous methods, it, too, had its disadvantages. For one thing the cubage of the building was not more efficiently employed. Wholesalers were able to make use of wasted space only by the costly method of manual high-stacking packaged merchandise.

Simplified Packaging

A new philosophy of simplified packaging, which effects tremendous economies in shipping space and handling costs is the use of pallets in the shipment of merchandise. The use of the pallet is not new, but its full possibilities were not realized in practice until the Navy and War Departments applied the system to their operations. Faced with the necessity of transporting millions of various-sized items at a time when any delay or waste of shipping space might precipitate critical war emergencies, the Navy developed a simple, time-saving, labor-saving, and space-saving formula for expediting the handling of the colossal volume of merchandise and supplies which passed through its depots in a never-ending stream.

The basic theory of the "palletized" (Continued on page 106)

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Container Standards

Wartime experience has demonstrated the need of basing container standards on performance rather than specifications. What is necessary is a growing appreciation on the part of shippers of the need for a new Rule 41, and for a proper policing of that rule.

By D. L. QUINN

Don L. Quinn Co.,
Chicago, Ill.

o o o

FOR many years all our standards for shipping containers, whether of wood or of fibreboard, have been based on specifications of the materials. Your experiences with Rule 41, for instance, give you a good conception of this practice.

Standards based on specifications had merit of course. They served a very useful purpose in that they showed the manufacturer of shipping containers the details of the materials, which when fabricated in accordance with the recommended practices, tended to make what we call a "balanced construction" with the result that the containers would develop the maximum strength their materials justified when used in shipping service.

Lacked Effectiveness

Looking back on our years of experience with those shipping container specifications, it is difficult to draw any other conclusion than that they were mostly educational. They lacked very much in effectiveness. The details were difficult to keep in mind and the policing of those details was almost impossible. In many instances they encouraged cheating, to put it mildly.

I don't want to take up much of your time discussing the shortcomings and limitations of standards based on specifications. I think I can cover the whole subject best by quoting the following from a recent address of P. M. Gillfillan, vice president, Shellmar Products Co., before the Packaging Institute in New York last November.

"By writing performance standards into specifications, Government agen-

cies put over in approximately a year what some of us had been attempting to establish over a period of many years with very little progress to show for our efforts."

Referring specifically to performance standards for moistureproof barriers, he said—

"(The standards) automatically removed 95 per cent of the so-called moistureproof barriers from the available list."

Impact Test

My earliest experience with an authoritative standard based on performance was the pendulum impact tester for carboys published by the Bureau of Explosives. In this test the carboy, packed in its case, and filled with water, was made to swing for a prescribed distance, impacting a rigid wall or bumper, hitting on the four sides and then the bottom of the box. Actually it was more of a test of the glass or earthenware carboy and of the method of protecting that carboy in its shipping case, than it was of the case itself. The box was covered by specifications of the materials used.

I do not need to tell you that it was and is an effective standard. It is easy to understand and to apply. It does not require any technical education on the part of the testing agency, and there can be no question of its practicability. The only wonder we hold at this time is why the Bureau did not follow up this particular test experience with a similar application

This talk was delivered at a recent meeting of the Mid-West Shippers Advisory Board at Chicago.

to other shipping containers for dangerous articles. As we see it now, that would have been an easy program to have followed.

Drop Test

The Quartermaster Corps of the Army is responsible for popularizing the drop test of the packed container as a Standard of Performance. It is a part of JAN-P-108 and applies to canned foods in tins in V1s and V2s boxes, after the boxes had been immersed in water for 48 hours. It reads as follows:

"V1s boxes of Style RSC-S1 and CSC-SL shall withstand a minimum of 12 drops when tested in accordance with requirements of paragraph F-3b (3)."

That is a very simple, easy to understand, standard to apply. It is quite practical. It is short and to the point. It is not easy to misinterpret. On the other hand the specifications for these boxes cover many pages and they are highly technical, as such have to be

In practice all that the Army or Navy Inspector needs to do is to make that drop test. If the box survives that test, the Inspector can be certain that it has all the strength to resist rough handling which the authorities in Washington who were responsible for that standard believe is necessary for very severe overseas shipping. It is a fact worthy to note that the boxes did perform in service up to every expectation.

Chicago On Test

The Chicago Quartermaster pursued that policy quite a bit further. That depot set up a standard for a drop test, based on a 100 ft.-lb. impact fall onto a concrete floor. The box was to fall onto one corner, then onto the three edges radiating from that corner, then flatwise onto each of its faces. These 10 drops constitute one cycle. The Quartermaster wanted two such cycles of falls to be applied. The box and the contents must then be in usable condition following that test to be satisfactory for overseas shipping.

I like this latter standard very much, better than I do the corner drop test, because in this test the performance of the box includes protection of the contents as well as demonstration

(Continued on page 109)

Hermetically Sealed Cars For Export Shipment

New technique developed for sealing railroad cars to protect electrical equipment in power trains enable the cars to be shipped as deck load and assure adequate protection of special equipment against salt corrosion and atmospheric humidity.

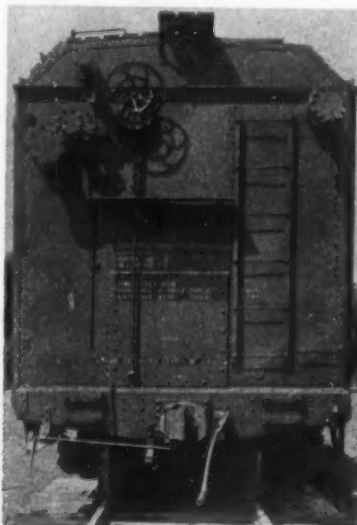
By GRAHAM LEE MOSES

*Transportation & Generator Engineer,
Westinghouse Electric & Mfg. Co.,
East Pittsburgh, Pa.*

o o o

The accumulation of condensed atmospheric humidity has been found to produce severe corrosion and rust in metallic parts and to rapidly deteriorate electrical insulation frequently promoting fungus growth. Furthermore, many types of finish which are normally satisfactory in ventilated places, where not continuously exposed to moisture-saturated air, deteriorate rapidly in a moisture

End view of turbo generator. Car showing complicated pipe connections between cars which required covering and sealing.



laden atmosphere. In packaging smaller electrical and metal parts for export shipment it has been found absolutely necessary to resort to elaborate forms of protection in many instances. These precautions include careful cleaning and slushing of metal surfaces together with enclosing in a completely sealed moisture vapor barrier and dehydration of the sealed package with desiccant.

Power Trains

The power trains are mobile central generating stations and contain the same general types of equipment as the conventional power station. Such equipment is well suited for operation under normal atmospheric conditions. However, it was recognized that the normal daily temperature cycling of such cars shipped on deck would produce condensate within the car. This condensation of moisture would cause metallic corrosion, finish deterioration and insulation damage if continued over several months without operation or dry-out.

The obvious purpose of such mobile power generating equipment is to produce power quickly upon arrival at its destination. Therefore, critical parts cannot be boxed and sealed separately (except in special instances) as the prime objective is to minimize the time required to set up and start producing power. To accomplish this purpose the best solution appeared to be to treat each car as a unit package and to seal it with suitable precautions with most of the apparatus assembled in place.

Test of Sealed Car

It was first necessary to demonstrate that such a program was feasible both from engineering and manu-

AN unusually large hermetically sealed unit package somewhat larger than the standard American boxcar was prepared recently for export shipment. There are actually several sizes of rail cars of special design which make up mobile electric power generating stations that have each been sealed as shipping packages.

The cars are too large for the hold of most ocean-going vessels and must be shipped as deck load. It is therefore necessary to protect the electrical generators, motors, transformers, switchgear and auxiliary apparatus as well as the steam turbines, pumps, gearing and auxiliary diesel engines from sea water and condensation of atmospheric humidity. This is accomplished by sealing each car which contains the major electrical equipment, within a giant moisture-vapor barrier and dehydrating the internal moisture with a suitable desiccant.

Humidity Protection

It has long been recognized that electrical apparatus and exposed metal surfaces must be protected from salt atmosphere and excessive humidity. The importance of this problem has been emphasized by recent American experience, particularly in the South Pacific, when vast quantities of such material have been transported and stored under adverse conditions. Much has been learned regarding the vulnerability of such equipment and the proper precautions to exercise for its protection. It has been learned that such equipment must not only be protected from direct contact with salt water, but that it must not "stew in its own juice" produced by the condensation of atmospheric humidity, such as frequently occurs in conventional packages.

facturing angles. To determine this one of the cars was sealed and tested.

The car selected was the service car which contained machine shop, laboratory, and crew quarters. The car differed from the equipment cars in that it contained considerable quantities (several thousand pounds) of wood "dunnage" which contained moisture. Dehydration, therefore, had to provide for absorption of this moisture as well as of atmospheric humidity.

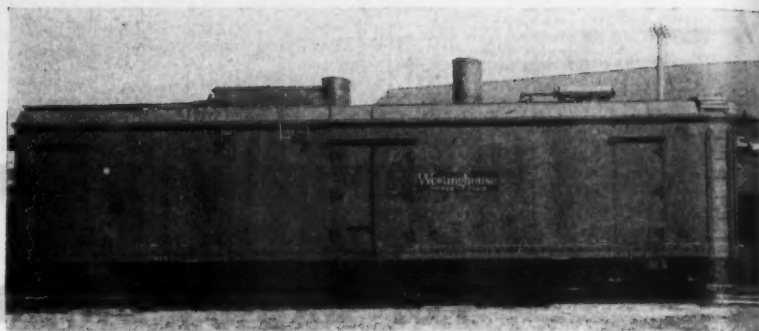
1. Preparation of Car: All openings were covered with steel plates or flashed with waterproof cloth. Cracks and joints were caulked. The whole car was then sprayed with a coat (1/16 in. minimum thickness) of non-breathing waterproof compound.

Immediately before final sealing of the door, 1200 lb. of silica gel in 5 lb. bags was distributed throughout the car.

2. Exposure of Car During Test: In order to insure wide temperature cycling and exposure to high humidity the car was moved from indoors to outdoors several times and sprayed with a fire hose. The weather co-operated by providing temperatures as low as 16 deg. F., with a rainstorm during the first outdoor exposure and a 6-in. snowstorm during the last exposure. The details of the exposure are given in the following table:

Elapsed Hours	Location of Car	Weather of Test Condition
4½	Moved Outdoors	Clear
23	Outdoors	4 hr. rain
52	Moved Indoors	
96	Moved Outdoors	Sprayed with fire hose for 2 hr.
100	Outdoors	During the subsequent period 6 in. of snow fell
216	Outdoors	When opened the car was covered with snow

Caulking joints and openings at end of turbo generator car in preparation for sealing the car with a moisture vapor barrier.



Turbo generator car for 5000 KW Power Train sealed ready for shipment contains steam turbine, main generator, transformers, switchgear and other important mechanical and electrical auxiliaries.

3. Test Results: The temperature and relative humidity conditions inside and outside the car were recorded on separate recording hythergraphs throughout the test.

At the start of the test the conditions were:

	Inside Car	Outside Car
Temperatures.....	60 deg. F.	60 deg. F.
Relative humidity....	30%	36%

The relative humidity decreased rapidly inside the car from 30 per cent at start to 20 per cent in 4 hours and 16 per cent at the end of 28 hours.

The extremes observed were:

	Inside Car	Outside Car*
Highest temperature....	59 deg. F.	74 deg. F.
Lowest temperature....	37 deg. F.	16 deg. F.
Highest rel. humidity....	30%	100%
Lowest rel. humidity....	16%	29%

Analysis of the silica gel moisture content indicated that equilibrium had been reached at 16 per cent r.h.

4. Observations: (a) A satisfactory seal was obtained on this car with a considerable spread in atmospheric temperature cycling (16 deg. to 74 deg. F.).

(b) The desiccant within the car quickly reduced the inside humidity to a safe value (below 20 per cent) and maintained this low value without outside high humidity conditions affecting internal humidity.

(c) Thermal insulation greatly reduced the effect of external temperature variations on temperature within the car (37 deg. to 59 deg. F.), which will minimize changes in internal pressure which might tend to produce breathing.

(d) Temperature cycling of the car air did not produce observable changes in the relative humidity of the car air.

Materials Used

The non-breathing water-proof material used for sealing the cars is a specially designed compound having a petroleum asphalt base with the addition of a considerable percentage of Gilsonite asphalt and an inorganic filler (mica dust). It is used as a solution and is applied by specialized spray equipment. It dries slowly by solvent evaporation but retains its plastic moisture vapor seal characteristics over a wide range of temperatures: (minus 50 deg. C. to plus 50 deg. C.).

Silica Gel (a prepared form of silicon dioxide) was used because it is the most inert of the desiccants. When activated by dehydration it absorbs up to 35 per cent of its own weight to maintain a relative humidity of 70 per cent. The action of silica gel in absorbing vapors is purely physical and there is no change in the size or shape of the particles as occurs when chemical absorption takes place. Even when saturated, the particles of silica gel feel and appear perfectly dry. It does not give up its moisture except

(Continued on page 110)

Distribution Worldwide

Reg. U. S. Pat. Off.

* To export capital, we must be prepared to do so on a long-term basis; it can be returned to us only in the shape of goods and services rendered by those who borrow.

— Robert Gaylord, President
Ingersoll Milling Machine Co. and
former head, National Assn. of Mfrs.

SEA Discloses

Turkish Trade Changes

Foreign Economic Administration has advised exporters that trade with Turkey through commercial channels for most items need no longer be submitted to the British-American Coordinating Committee in Turkey for recommendation.

A Turkish purchasing mission is now in this country prepared to place orders for \$15 million worth of urgently needed spare parts and replacements for industrial and mining equipment.

Commerce Bureau to Expedite Trade

Bureau of Foreign and Domestic Commerce, Department of Commerce of the United States, has announced that arrangements have been made for supplying services of the department's 26 field officers to business men requiring transportation aboard planes of the Army Air Transport Command or the Naval Air Transport Service, or in War Shipping Administration ships.

Applications for such trips will be accepted at the Commerce field office and processed for the applicant.

Liberalized Reciprocal Trade Act, Foreign Exchange Commission Urged

Trade Records Broken

Bureau of the Census, Department of Commerce, has announced that the value of United States export trade broke all records during 1944 and that the value of the United States import trade reached a 15-year high.

The Bureau also released for first time information on physical volume of these record-breaking import and export totals showing that shipping weight of exports in 1944 reached a total of 185 billion lb., an increase of 12 billion lb. over the already very high year of 1943.

United States imports in 1944 had a total shipping weight of 119 billion lb., a substantial increase from 1943's 100 billion lb.

Defer Lighting Exposition

Postponement of International Lighting Exposition scheduled for Chicago Apr. 19-23 until next year has been announced by chairman, Industrial and Commercial Lighting Equipment, National Electrical Mfrs. Assn.

Chamber of Commerce Adopts Measure Calling for 'Greatly Expanded Economy'

The Chamber of Commerce of the United States report recently issued by its foreign commerce department adopted by the board of directors calls for a "greatly expanded economy," through assurance of a maximum level of employment in the United States via reduction, or elimination, of excessive foreign trade controls.

"To provide a high level of employment in the United States (say 55,000,000 persons) and to carry the increased public debt, the United States requires a greatly expanded economy," the report states. "It appears possible to consume at home all the production necessary to provide and sustain the desired employment.

"Nor can the necessary exportation of goods be absorbed by an impoverished world, the trade of which is held back by excessive trade and currency barriers and restrictions; or absorbed by a world unable either to pay in goods or foreign exchange for the merchandise that we have to sell, or able to repay eventually our exported capital.

"The Atlantic Charter, the lend-lease policy and the reciprocal trade agreements act are all based on the principle of liberal world trade relations in peace, to the end that international commerce be freed from excessive and unreasonable tariffs, preferences, quotas, exchange controls, monopolies and subsidies. These should be reduced or eliminated. The widespread endorsement of these principles in the world at large remains to be implemented.

"The tendency of some nations to perpetuate wartime exchange controls in the form of currency areas embracing many countries which would trade preferentially with each other to the disadvantage of those outside the area is a menace to the establishment of fair and nondiscriminatory trade relations necessary for healthy trade growth. Should the world slip back to trade of prewar dimensions, there will be too little commerce for either prosperity or enduring peace.

"We recommend that the United States adhere strictly to the above principles.

Establishment of a foreign commission and prompt extension and liberalization of the Reciprocal Trade Agreements Act was advocated in a talk at Los Angeles, Cal., by Harry S. Radcliffe, executive secretary, National Council of American Importers, Inc.

Mr. Radcliffe declared that those two factors must be included in any program for the consideration of postwar foreign trade problems.

"A congressional resolution calling for the establishment of such a commission failed during the 78th Congress," Mr. Radcliffe told members of the Southern California World Trade Institute, "and it is right that it should be resubmitted for prompt attention of the new Congress.

"All foreign traders should vigorously support the extension and liberalization of the trade agreements act which will expire on June 12, 1945."

Mr. Radcliffe also urged those engaged in foreign trade to lend their efforts to see that this country obtains a well-trained corps of commercial representatives in foreign countries charged with assisting exporters to develop foreign markets and securing foreign products for American markets.

In emphasizing the need for close cooperation among foreign traders as a means of eliminating problems during the postwar era, Mr. Radcliffe said:

"Foreign traders, in cooperation with banks and air lines, can anticipate some of the problems of air transportation, including the question of appropriate documents and forms that will facilitate exports and imports by air."

Mr. Radcliffe said the general public is beginning to realize that foreign trade is an important factor in the postwar objective of the United States for maintaining the high level of production required to assure domestic prosperity and full employment.

"Producers and consumers of the United States will never willingly go back to prewar levels of domestic productive activity," he said. "Aside from the advantages of a steadily rising standard of living, we realize that increased trade and economic activity at home and throughout the world offer the best foundation for a permanent peace."

Mr. Radcliffe pointed out that it has been estimated that American postwar exports should be somewhere
(Continued on page 120)

Outlook for Foreign Trade Zones Is Reported As Favorable

Broader knowledge of the functions and advantages of the foreign trade zone has prompted an increased number of national, regional and local trade and civic associations to urge ports to provide similar facilities for expanding world trade, Foreign Trade Zones Board states in annual report to Congress.

OFFICIALS of major American ports who share the responsibility for developing our foreign trade "should not underestimate the potentialities of the foreign trade zones for attracting and holding trans-shipment and re-export trade," the Foreign Trade Zones Board states in its annual report to Congress, for the fiscal year ended June 30, 1944, which was released for distribution last month.

"Although showing brief promise at the conclusion of World War I," the report says, "it can be stated with assurance that the United States has not enjoyed trans-shipment, re-export and consignment business mainly for the reason that we have failed to provide adequate facilities for servicing this class of trade. Excessive port expenses resulting from multiple cargo handlings and transfers along with costly formalities stifled the development of this lucrative traffic.

Advantages Cited

"Shipside storage and more extensive use of mechanical equipment including pallets for the handling and warehousing of large units of packaged merchandise will reflect considerable reductions in terminal costs of cargo intended for re-export and trans-shipment.

"While the foregoing facilities should be regarded as standard equipment at all deep water terminals, the foreign trade zone has the added advantage," the report holds, "of reducing the cost of surveillance. The provisions in the Act for the stabilization of charges are an added protection for shippers who intend to utilize a zone's facilities for extended periods. Improved banking facilities and a better knowledge of world trade on the part of our merchants and traders also augur for future success in this field," the report states.

"Broader knowledge of the functions and advantages of the foreign trade zone, gleaned from actual results at the New York Zone, has

prompted an increased number of national, regional and local trade and civic associations to urge other ports to provide similar facilities for expanding world trade.

Urged by Various Groups

"Early in 1944 the San Francisco Chamber of Commerce restated its long standing approval of the foreign trade zone principle and urged the local harbor commission to proceed with the establishment of a foreign trade zone at San Francisco as soon as a suitable site is selected.

"The International Business Conference at Rye, N. Y., in November, 1944, recommended that additional foreign trade zone facilities be provided in important world ports, and the Mississippi Valley Assn., at its 1944 annual meeting, by resolution urged modernization of our ports and recommended the creation of additional foreign trade zones.

"For the fifth consecutive year, the final declaration of the National Foreign Trade Convention approved the New York Foreign Trade Zone opera-

tion and recommended that other ports provide similar facilities.

"The Pacific Coast Assn. of Port Authorities and the American Assn. of Port Authorities at their respective meetings, last year, adopted resolutions endorsing the principle of foreign trade zones. The resolution of the Pacific Coast Assn. also urged that Congress amend the Foreign Trade Zones Act to permit manufacturing and exhibiting.

"The Seattle Chamber of Commerce is cooperating with the Washington State World Commerce Commission studying the possible advantages which might accrue to the Pacific Northwest by the establishment of a foreign trade zone on Puget Sound.

"The Foreign Trade Assn. of Southern California, after a detailed investigation, recently recommended to the local harbor commission that a foreign trade zone be established in the Los Angeles harbor area.

"At its last session, the Virginia State Legislature approved a bill which would authorize public corporation to apply for permission to establish and operate foreign trade zone in the Hampton Roads area. This legislation was sponsored by the Hampton Roads Maritime Exchange."

The report was signed by Jesse Jones, Secretary of Commerce; Henry Morgenthau, Jr., Secretary of Treasury, and Henry L. Stimson, Secretary of War, who, by virtue of their respective positions, constitute the Foreign Trade Zones Board. Thomas E. Lyons is executive secretary.

U.S.-Canadian Regional Cooperatives Did Volume of \$151,000,000 in '44

United States and Canadian regional cooperatives affiliated with National Co-operatives, Inc., did a wholesale business of \$151,205,317 in 1944, a gain of \$26,805,933 over the 1943 total, the Co-operative League of the U.S.A. reports.

The regional consumer and purchasing associations serve 3248 local retail co-operatives with 1,166,650 farm and city patron-members.

The league said purchases by the

regional co-operative associations increased more than threefold in last six years. In 1939 the wholesale business amounted to \$48,338,000.

"These statistics do not give a complete picture of the business transacted by the consumer and purchasing co-operatives," said a league statement. "These are wholesales volume. The business of local retail co-operatives affiliated with these regions will run considerably higher."

New QM Training Course In Tropical Storage

A NEW course and a new visual aid have recently been added to the training program of the Quartermaster Depot Supply School Army Service Forces Training Center, Camp Lee, Va.

The new course is "Storage of Supplies in the Tropics." The new visual aid is a sand table in Building T-965, on which a base depot, a regulating station and an Army Quartermaster depot are set up in miniature.

Tropical Storage

The course in tropical storage is based largely on information received

concerning actual experiences of Quartermasters who have served in the South and Southwest Pacific. Included in the instruction are conferences on the types of storehouses and dunnage, the material placed under supplies to keep them from coming into contact with the ground or floor, the proper methods of piling for hot and humid weather, and the preferred type of containers used in the climate.

Sand Table

The sand table in Building T-965 is used in connection with a course in field and supply operations. By its

use, the instructor may impress upon students exactly what is meant by the flow of supplies, maneuvering room, traffic control, the principles involved in considering selection of sites, and many other things that must be considered in establishing a depot in a theater of operations.

The table is used as a training aid to impress upon the Depot Supply trainee the many problems arising in the maintenance and supply of an Army in the field. Plans for the table were prepared by Capt. P. J. Simiriglio, instructor in the school, and the table was constructed by Cpl. Loren H. Sparks, one of the students.

Three Sections

The sand table is divided into three sections. To the left is a replica of a QM base depot at a port. It shows warehouses, tracking and switching facilities in conjunction with efficient transportation nets. In the center is the layout of a regulating station, a traffic control agency, which is used to inform students of the importance of switching and trackage facilities required at such an installation.

Traffic Control

Principles of traffic control are taught, since storage at such a site is largely non-existent. A station of this type is usually set up in the advanced section of the communications zone. At the right is the site of the location of an Army QM depot, an installation established in the rear of the combat zone, part of a field Army. Open storage is often necessary at an installation of this type.

In addition the commissary accounting course has been completely revised, following procedures outlined in the new technical manual 10-215, "Sales Commissary Operation." A practical exercise on the sales officer's monthly account is given in connection with the discussions.



Correct methods of Army supply storage and transportation are now illustrated by the use of a newly-constructed sand table in a classroom of the Quartermaster Depot Supply School at Camp Lee's Army Service Forces Training Center. Above, Tech. Sgt. Franklin A. Schmidt, Milwaukee, Wis., an instructor at the school, is shown explaining the procedures used in setting up a Quartermaster depot in the field.

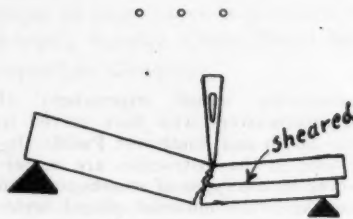
U. S. Army News Photo

How to Figure the Stress Of Wooden Beams

By W. F. Schaphorst

HAVE you ever broken a piece of wood with an axe in the manner as indicated in the accompanying sketch? And have you ever noticed that the piece of wood will often break as shown—by shearing along the so-called neutral axis? The split or shear is always in the middle, and you will find that such shearing occurs only when the piece of wood or "beam" is short. When the beam is long it will break through without shearing.

It is therefore obvious that the shearing strength of a wooden beam



along the horizontal axis, is important. In fact, it is this shearing strength that more or less determines the safe strength of a wooden beam rather than the tensile or compressive strength of the fibres. It is strong in compression directly against the grain. It is strong in shear "against" the grain (which some call "across" the grain). And it is amazingly strong in tension when the pull is lengthwise "with" the grain.

In steel beams this shearing strength is seldom of importance because in steel there is no grain such as exists in wood. For example, if a steel beam is loaded to destruction by being struck by a hammer in the midpoint in the manner as portrayed in this sketch, it would not fail by shearing. It wouldn't even break. It would simply bend.

If the above is not perfectly clear the writer suggests that you make some tests by breaking some pieces of wood or "beams" in various ways. It will soon be understood that this shearing stress exists, and you will also understand why that shearing stress exists.

Without entering into the theory of wooden beams, and feeling that the above makes it clear why shear is so often mentioned, the writer will say that, for wooden beams, the American Railway Engineering Assn. has chosen the following rule as acceptable for determining the maximum safe load for such beams:

Multiply the area of the section of the beam in square inches by the safe unit stress for longitudinal shear, and multiply that product by 1.33. The result is the safe maximum load in pounds, distributed uniformly.

The safe unit stresses recommended by the above mentioned engineering association for longitudinal shear are as follows for commonly used woods:

Type	lb. per sq. in.
White oak	110
Longleaf pine	120
Shortleaf pine	120
White pine	70
Douglas fir	110
Western hemlock	100
Spruce	70

Using the above rule and the above safe unit shearing stresses, the reader can now work out a problem for maximum load determinations. For example, take a Douglas fir beam, 2 in. deep and 10 in. wide. We have $2 \times 10 \times 110 \times 1.33$ which gives us 2930 lb. as the maximum load.

As for limiting span, "bending mo-

(Continued on page 49)

New Bridge Ramp



Screw type showing bridge ramp raised and ready to be positioned into gap between box car and loading platform.

Because of the use of heavier equipment for loading and unloading cars, it is necessary to have a well constructed bridge ramp to span the gap between car and platform.

This plate should be of solid construction, preferably crowned, and with lift handles so that the fork truck can lift the plate and carry it from one position to another.

Such a plate has been designed and is now being built in quantity by the

Elizabeth Iron Works, Green Lane, Elizabeth B, N. J.

The ramps are built in type 20-34 with screw adjustment, and type 6-34, which embody all the standard features, including a pin self-leveling adjustable locking device. This is said to allow for wide variance in gap between car floor and platform, as well as difference in elevation, and eliminates the necessity of nailing and spiking to the car floor.

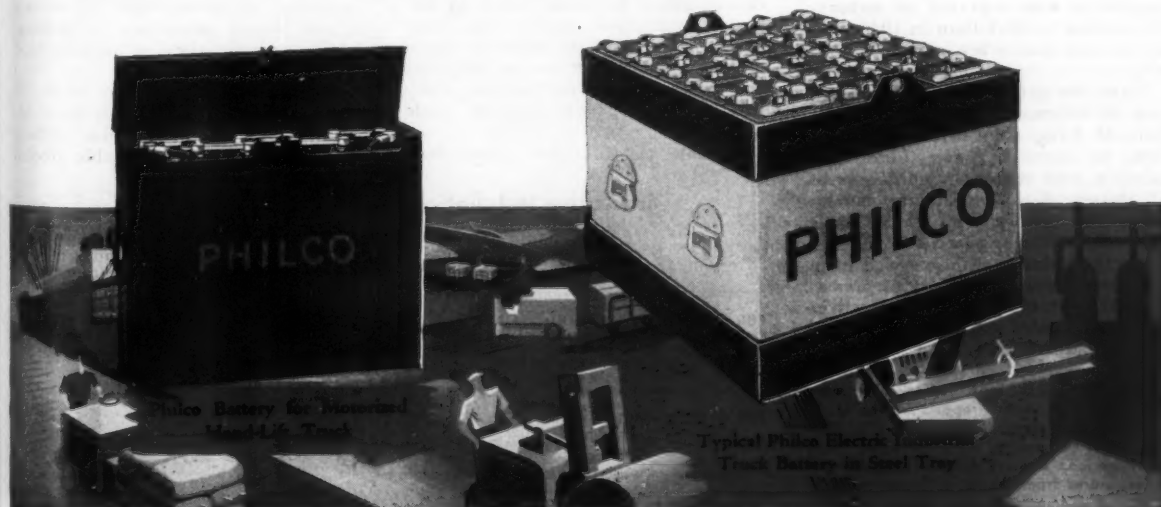


The new Philco "Thirty", with 30% longer life, is identified by its distinctive red top.

Consistently through the years, users of PHILCO Storage Batteries—both motive power and stationary types—have been *first* to get the major developments contributing to high capacity, greater efficiency, longer life, lower cost. Newest Philco *first* in industrial storage battery engineering is the new Philco "Thirty" with 30% longer life—now available in certain types and limited quantities for electric industrial trucks. Catalogs of this and other modern Philco Batteries for your special needs will gladly be sent on request.

Philco Corporation, Storage Battery Division, Trenton 7, New Jersey

For 50 years a leader in Industrial Storage Battery Development

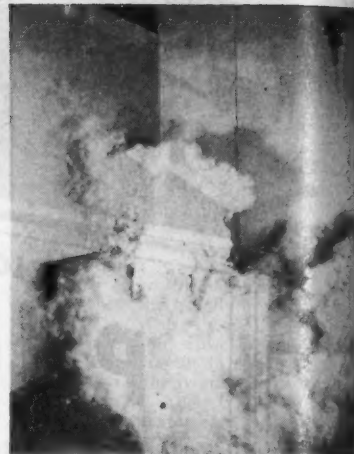


Safeguarding Property Against the Criminal

Crime waves follow wars. In the 10 years following World War I, bank robberies increased 300 per cent and burglaries almost an equal amount. The increase in crime, as a result of the present war, has already begun. Thirty per cent more burglaries were reported on mercantile alarms in 1944 than in 1943.

By H. B. MICHAEL

*Burglary Protection Engineer
Underwriters' Laboratories, Inc.
Chicago, Ill.*



TEAR GAS: Tear gas issuing from a safe a few seconds after the lock is punched during tests for effectiveness.

TODAY, in a world aflame, the stage is being set for a crime wave of substantial proportions. Many authorities agree that crimes against property run in cycles, and if history repeats itself, burglaries, robberies, and thefts will increase for at least a decade. In the 10 years following World War I, for example, bank robberies increased 300 per cent and burglaries almost an equal percentage. The increase in crime has already begun. Thirty per cent more burglaries were reported on mercantile alarms in 1944 than in 1943. Let us consider just a few of the reasons why.

First, the profit motive. There are now 25 billions of dollars in circulation, 80 billions in savings, 160 billions in chattels, jewelry, etc., certainly a real attraction to thieves of all classes. Secondly, the national income has doubled and values have increased. When appreciable changes occur in incomes and prices, either up or down, crimes usually increase. Thirdly, war touches deeply the lives of many peoples and causes profound social readjustments. And finally, we

AUTHOR'S NOTE: Statistics on crime were compiled from recent reports of the U. S. Department of Justice and confidential files. Estimates on wealth were obtained from the American Bankers Assn. and on number of exposures from the U. S. Department of Commerce as of 1936.

must not overlook the widening tide of racketeering and disrespect for law.

Purpose of Protection

There are three basic reasons for crime prevention measures. Briefly stated these are:

(1) To save human life. (2) To prevent property loss. (3) To reduce costs and taxes.

Crime prevention, as we shall see, requires protective appliances. We cannot afford to tempt youth by exposing valuables within his easy grasp, nor can society afford to spend billions annually for courts and prisons to support the professional criminal when his trade can be made unprofitable.

Reliable crime reports show that,

nationwide, there is a theft every 40 seconds, a burglary every two minutes and a robbery every 12 minutes every hour of every day. More than one million crimes annually or an average of two committed by each of the estimated 500,000 criminals at large.

Many commercial properties have inadequate protection or none at all. Our 2½ million business premises are closed and unguarded 70 per cent of the time. Even though municipal and state police science has improved greatly, these public servants devote much of their time to traffic problems. They cannot act as private watchmen. If our police forces were increased ten-fold, they could not guard these properties all of the time. Criminals attack where protection is lacking, where apprehension is unlikely and theft profitable.

A natural mistake is to think "It can't happen here, or, if it does, insurance will replace the loss." Often, however, loss of irreplaceable stocks,

Protective Installations Classified By Certificate

Type	Available Grades	Degrees of Protection
FOR BURGLARY PROTECTION:		
Central station burglar alarm (bank vault and safe).....	A or B	Complete or Partial
Bank vault local burglar alarm.....	A, B, C	Complete or Partial
Central station mercantile burglar alarm.....	A or B	No. 1, 2, 2½, 3
Local mercantile burglar alarm.....	A or B	No. 2, 2½, 3
Tear gas for vault and safe.....	One	Partial
FOR ROBBERY PROTECTION:		
Bullet-resisting enclosure.....	Medium power	Complete robbery
Tear gas for interior robbery.....	High power	Complete
Hold-up alarm system (Central station or police station only).....	One	Manual or semi-automatic
	One	

ments, merchandise or even customer confidence can prove fatal to a business enterprise. Insurance indemnities against loss, but does not prevent crime. Then too, as increasing numbers of properties install adequate safeguards, the hazard increases for those left unguarded. If conditions are tough in one locality, the thief moves on to more fertile fields.

Automatic Protection

Space does not permit a detailed account of all of the acceptable forms of protective systems now available. "Approved" systems are required to have expert installation and maintenance. They may be identified by a serially numbered, classification certificate issued to a specified location. The certificate is issued for periods of five years depending upon the terms of the service contract. Classifications for these systems are enumerated in the table herewith.

There are, in addition, many physical retardant devices identifiable by Underwriters' Laboratories inspection manifest or label applied at the factory. Included in this category are locking devices which function when a combination lock is punched or opened by burglars; delayed-action time locks to impede armed robbery of safes and vaults; and, finally, several types of burglary resisting safes which are classified as to their resistance to tools, torch, high explosives and all three, depending on their performance in test. For these devices, maintenance under contract is not required as a condition for classification. Previously, jeweled time locks, like exquisite wrist watches, should have periodic inspection.

The first question confronting a



TEST OF TORCH-RESISTING SAFE: Sledges and drills are followed by the oxy-acetylene cutting torch in testing a concrete encased torch-resisting safe.

business man is "How much protection do I need?" The answer depends on the commodity, the location, and immunity desired. For financial institutions, the risk is great and existing concrete and steel vaults or safes may not be sufficient. Safe deposit companies and other custodians of public or private funds have found that alarm protection is very necessary. For mercantile properties generally, iron bars, locked doors and lath and plaster walls are certainly inadequate. Here, as with stocks of narcotics and

rare drugs, supplementary protection against burglary is essential.

For signaling unlawful entry, the burglar alarm has been widely adopted because it is automatic. Mercantile burglar alarms of either the local gong or central station type provide a wide range of established degrees of protection. Briefly, mercantile alarms are classified as No. 3 if protection covers accessible openings only, No. 2½ or 2 for intermediate extent, and No. 1 for complete coverage, as on a stockroom. Vault alarms, however, are classified as complete or partial in extent.

These varying degrees of extent are usually accorded recognition in proportion to their demonstrated value based on extensive or average experience. The experience is not necessarily the same for mercantile as for bank properties, nor for local gong as compared to central station alarms.

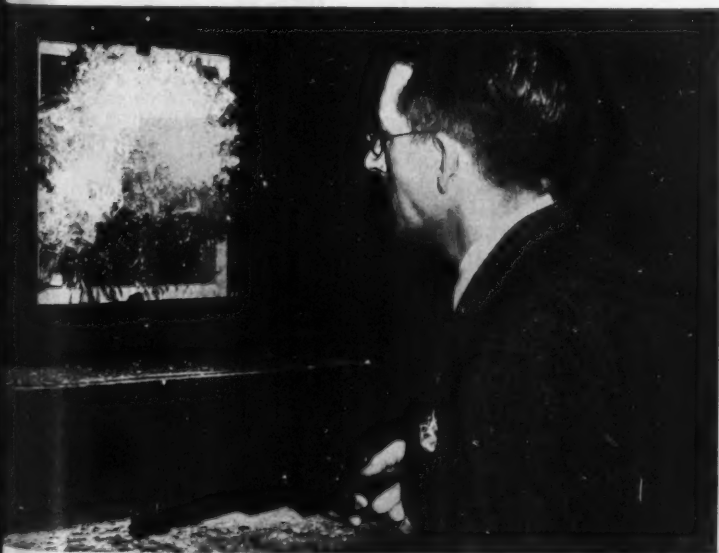
Protection against armed robbery requires careful planning to outwit the ingenious armed robber who takes advantage of elements of speed and surprise. Banking institutions have been compelled to protect life and property against this hazard by installation of bullet-resisting enclosures, tear gas, alarms or delayed-action time locks. Commercial institutions may find it necessary to follow suit in the next upsurge in crime.

To combat hi-jacking of cargo vehicles and robbery of messengers, special alarm devices have been effective if properly installed and maintained.

For more detailed descriptions of extent and types of systems available, the reader is referred to the List of

(Continued on page 112)

BULLET-RESISTING GLASS: Bullet-resisting glass for use in cashier's cages and armored cars is shot from close range with high-powered weapons and proof-tested ammunition. Medium, high-power and rifle-resistant glass is tested in this manner.



Quartermaster Depots Now Handling 1,250,000 Tons of Supplies Monthly

REPORTS of a monthly average of almost 1,250,000 tons of Quartermaster supplies handled by Quartermaster and Army Service Forces Depots during November and December of 1944 in comparison with an average of approximately 900,000 tons for the same months in 1943, illustrate the rapidly changing scene both in the European theater and in the Pacific, the War Department said last month.

In spite of 10 per cent less storage personnel than a year ago, and no increase in storage space, the greatly increased tonnage has been handled through many innovations devised by the Storage and Distribution Division, Office of The Quartermaster General, to increase the efficiency of storage and handling, among which are new methods of space utilization, palletizing, unitizing loads, and many innovations in general warehouse practice.

Increased Demand

With every indication that the demand for the year ahead would increase in like proportions, Brig. Gen. A. M. Owens, chief, Storage and Distribution Division, told a recent conference of the officers and chief storage consultants from every Quartermaster Depot and Quartermaster Section of the Army Service Forces in the country that even greater effort and ingenuity must be applied by Depot heads and personnel to be able to handle the anticipated load.

The conference brought together 40 of the foremost military and civilian storage authorities in the country for a three-day meeting at Camp Lee, Va., during which Gen. Owens pointed out that, previous to 1944, the greater percentage of troops were stationed within the continental United States, and the volume of supplies for the Zone of the Interior and the overseas theaters was fairly evenly divided.

5,000,000 Troops

At present, with 5,000,000 troops overseas, considerably more than double the subsistence must be shipped to feed a man overseas compared with that needed for a soldier in the Zone of the Interior where approximately half of the ration is made up of perishable foods purchased locally and never handled by a Quartermaster Depot. Correspondingly, the man on the fighting front wears out clothing and equipment at least twice as rapidly as he does in the United States.

1,000 Camps

Methods of handling the anticipated further increased demands on existing warehouse facilities were dis-

cussed by Lt. Col. E. H. Ward, chief, Warehouse Managing Section, Office of The Quartermaster General, who emphasized the advantage of standardized procedures in the Quartermaster Depots which are siphoning ever-increasing tons of merchandise

to more than 1000 camps, posts, and stations both here and abroad.

Pulpwood

The War Production Board has stated that domestic pulpwood production must reach 16,000,000 cords this year to meet increased demand. Domestic production in 1944 totaled 14,819,900 cords, an increase of 13 per cent over 1943 and 2 per cent above 1942. Imports in 1944 totaled 1,649,500 cords, according to official figures.

Fork Trucks Reduce Handling Costs 35 Per Cent Says Trucking Officials

A 100 per cent increase in freight handled at the company's main depot is due to the installation of four Clark Fork Trucks, according to Harry F. Chaddick, president, American Transportation Co.

"More than a million pounds of material every day are handled by these four machines," said Mr. Chaddick. "When we installed them we were astonished to find, after a 30-day trial, that we had cut our handling cost by 35 per cent."

"Today we are convinced the freight is handled across our platforms at the lowest cost per ton in this area. These machines have been a tremendous help during the manpower crisis, because of their ability to move big tonnages with only a few men. If it were not for these fork trucks, there can be no doubt that a manpower problem would have made it impossible for us to maintain—let alone increase—the tonnage we handle daily."

THIS PHOTOGRAPH shows a Clark fork truck moving a load of cartons from sorting platform to truck.



IN ONE FAST, easy operation, the Clark fork truck carries a load from the loading platform right into the truck.

To Figure Stress Of Wooden Beams

(Continued from page 44)

ment" enters here and gives us the following rule which was derived from an authoritative text book on Mechanics of Material:

"Multiply the allowable compressive fibre stress of the beam in pounds per square inch by the width of the beam in inches. Multiply that by the square of the depth of the beam in inches. Then divide by 9 times the total uniformly distributed load in pounds. The result is the limiting length of the span in feet."

The safe compressive fibre stresses parallel to the grain as recommended by the American Railway Engineering Asm. are as follows:

Type	lb. per sq. in.
White oak	1100
Longleaf pine	1300
Shortleaf pine	1100
White pine	900
Douglas fir	1200
Western hemlock	1100
Spruce	1000

Now let us apply this rule to the Douglas fir beam above, 2 in. deep by 10 in. wide which we found can be loaded with a maximum load of 2930 lb. uniformly distributed: $1200 \times 10 \times 2 \times 2 = 48,000$; $9 \times 2930 = 26,370$; $48,000 \text{ divided by } 26,370 = 1.82 \text{ ft.}$

That is a very short beam, isn't it? Why is it so short? Answer: because the depth is only 2 in. Beams are seldom laid that way or used that way. Wooden beams are usually placed with the larger dimension in the vertical position, so let us turn this Douglas fir beam through 90 deg. so that the depth will be 10 in. and the width 2 in. What do we get as the limiting span now? $1200 \times 2 \times 10 \times 10 = 240,000$. Dividing 240,000 by 26,370 we get 9.1 ft. In other words, when placed edgewise the beam can be five times as long as when placed flatwise.

The above rule takes it for granted that the beams are properly braced against lateral deflection.

And finally, a good thing to know is this: When the entire load is concentrated in the center of the beam (that is, when the load is not uniformly distributed), the safe loads are equal to one half of the values given by the rules.

Thus the safe load for the beam 2 in. deep and 10 in. wide, made of Douglas fir, would be 1465 lb. with the entire load concentrated in the middle. Likewise, when turned on edge the safe load would still be 1465 lb.

Prefabricated Products

At present engaged in making prefabricated crates for war shipping is South Bend Fabricating Co., which is affiliated with the Raymond Lumber Co. The latter plans manufacture of complete prefabricated building units after the war. (Haskell)

UNSKILLED LABOR ADDS NOTHING
TO A PRODUCT EXCEPT COST



Human power just doesn't reach that high. Stacking materials with . . .

CLARK fork trucks

inside factories or in the yards, utilizes space more efficiently, saves manpower, does a better, cleaner, more economical job.

CLARK TRUTRACTOR

BATTLE CREEK, MICHIGAN, U.S.A.

Products of CLARK • TRANSMISSIONS • ELECTRIC STEEL CASTINGS
AXLES FOR TRUCKS AND BUSES • AXLE HOUSINGS • BLIND RIVETS
INDUSTRIAL TRUCKS AND TRACTORS • HIGH-SPEED DRILLS AND REAMERS
METAL SPOKE WHEELS • GEARS AND FORGINGS • RAILWAY TRUCKS

Let's Have Highway Equipment For Better Materials Handling!

If truck manufacturers would develop standards in accordance with the requirements of various industries definite progress could be made in the standardization of trucks so that uniform handling methods could be used in industrial plants which would reduce the cost and time materially for the loading and unloading of shipments.

By **MATTHEW W. POTTS**
Materials Handling Editor

THERE is no doubt that one of the basic requirements of postwar highway equipment will be the ability to load and unload the equipment quickly and with the least amount of manpower possible. In order to accomplish the mechanization of truck-loading and unloading, it will be necessary for truck manufacturers, trucking associations, operators, and various plants and terminals being served, to get together and develop some overall standards as to the proper height of the truck floor so that it will conform with truck loading and unloading platforms.

If the truck mechanism, the large diameter tires for capacity loading, etc., require a definite height of the truck platform, then that truck platform should be standard for trucks, trailers, semi-trailers, etc., and not vary more than 2 in. or 3 in. in overall height for this class throughout the entire truck equipment field.

Standards Should Be Set

The standards should be developed and architects and engineers should be advised of this standard height so that all new platform construction can be made to conform to this height to keep the floor and the platform at one level if possible. In this way, new platforms can be properly constructed to fit the postwar truck platform height, and revisions can also be made in existing platforms in order to make loading heights uniform.

This is a basic requirement, even if

the trucks are loaded by just simple two-wheel hand trucks. It is even more essential if hand lift trucks and skids or hand lift trucks and pallets are being used.

Bridge Plates

The use of bridge plates between platforms and truck bodies can assist in overcoming a difference in elevation of 2 in. either above or below the platform level, but any greater distance than this makes too sharp

an angle for even hand equipment to negotiate satisfactorily without additional assistance in getting on and off a truck.

Truck Widths

A second basic requirement should be the standardization of truck widths. In some states, the maximum over-all width of the truck is limited to 8 ft., while in other states this over-all width can be increased. It is difficult to say whether or not the width should be increased beyond 8 ft. in the congested eastern districts where this over-all limit now prevails.

However, if there is going to be a limitation, then it should be standardized. The 8 ft. limit has some disadvantages, and will have even more disadvantages if there is considerable movement of palletized unit loads on the present Army and Navy standard pallets which are 48 in. sq. It will be seen that two of these placed side by side immediately takes up the 8 ft. limit without allowing for side panels, stake pockets, or rub rails. If the 8 ft. limit is not going to be changed, then steps should be taken



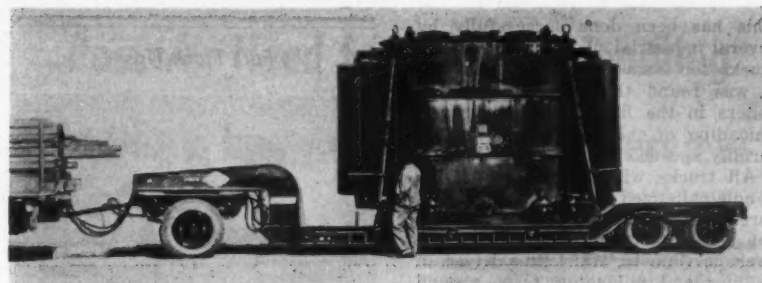
A NEW IDEA in truck-trailer design that will appeal to haulers who depend mainly on livestock transportation is this conversion of a standard Fruehauf trailer into a combination freight van and livestock hauling unit. Sliding panel ventilators can be opened or closed in a few minutes. This means that livestock can be kept cool in summer and warm in winter without exposing it to wind, snow or rain. When the trailer is loaded with merchandise or household furniture the side windows are closed, as shown here, and it becomes an all-purpose van.

to determine the maximum inside dimensions of trucks whether with stakes or side panel bodies, so that industrial engineers can develop a standard width of pallet permitting two pallets to be placed side by side within the body limits.

At present some bodies are so narrow that they only have about 6 ft. 6 in. inside clearance, and some shippers have gone so far as to use one 48 in. standard pallet and then construct what is known as a half-pallet, 24 in. wide, so they can load palletized unit loads into the truck bodies mechanically.

Use of Fork Trucks

The over-all height of truck bodies will be limited by overhead structures and this will have a bearing on whether or not power industrial



SPECIAL DUTY EQUIPMENT probably will always be in demand. The Philadelphia Electric Co. has found it more efficient to pick up its transformers and bring them into a central repair shop when necessary, rather than overhauling them on the spot. Naturally, it requires particularly husky delivery units to bring these transformers into the repair depot. Here is the Fruehauf drop-frame, flat-bed unit which does the work. Shown on the big trailer is a transformer weighing about 28 tons.

Truck manufacturers should give this consideration in developing the

into the highway truck bodies, there will be a concentrated load on the two drive wheels of the industrial fork truck of approximately 6000 lb. when handling the load directly into the highway vehicle. This weight factor is based on handling with a 2000 lb. capacity fork truck.

Rollers and End Gates

If the highway vehicles are not going to be loaded directly with industrial power trucks, then provision should be made for mounting rollers in the floor with locking mechanisms to hold the load rigid while in transit.

NO one company can determine the standard. It is an activity to be taken up by the trucking associations, the users and the manufacturers right now in order to have these standards developed and incorporated in the new designs of trucks and truck bodies which will become available in the postwar period.

trucks can run into the truck bodies for depositing unit loads.

truck floor construction, because if power-operated fork trucks are to run

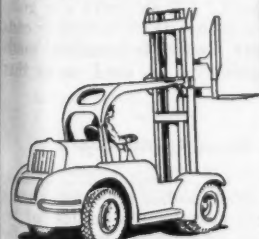
Where ***SPEED*** really counts



For one ton loads



7500 lbs. capacity



Heavy Duty 15,000 lbs. capacity

The speedy movement of vital materials — employing a minimum of labor — reduces handling costs right on down the line. HYSTER'S fast-in-every-operation Fork Lift Trucks are "delivering the goods" in that way.

The three models illustrated have introduced many short-cuts and innovations to materials handling: operating in congested areas, performing yard service, tiering goods in storage, etc. They will do an equally efficient job for you.

For detailed information, send for the new HYSTER booklets. Please indicate approximate load capacity requirements.

345-38

HYSTER Company

2940 N. E. Clackamas Street
PORTLAND 8, OREGON

1840 North Adams Street
PEORIA 1, ILLINOIS

Pioneer manufacturers of mobile materials handling machines: fork lift trucks, crane trucks and straddle trucks. All gasoline powered; all pneumatic tire mounted.



BRANCH OFFICES . . . 221 N. LaSalle St., Chicago 1, Ill.; 90 West St., New York 6, N. Y.; 1022 Denike Bldg., Washington 5, D. C.; 233 Ninth St., San Francisco 3, Calif.; Masonic Bldg., New Orleans 12, La.; 2219 Fourth Ave., Seattle 1, Wash.; 2700 Santa Fe Ave., Los Angeles 11, Calif.; 215 Euclid Ave., Cleveland 14, Ohio; 211 Farnsworth Bldg., Memphis 3, Tenn.

This has been done successfully by several industrial plants on their own trucks for intra-plant shipments, and it was found that by having these rollers in the floor, the loading and unloading of the truck could be materially speeded up.

All trucks will not be required to handle palletized unit loads, and therefore consideration should be given to the use of elevating end gates wherever possible to assist the driver in loading and unloading from ground level when other hoisting equipment is not available.

Roofs and Hoists

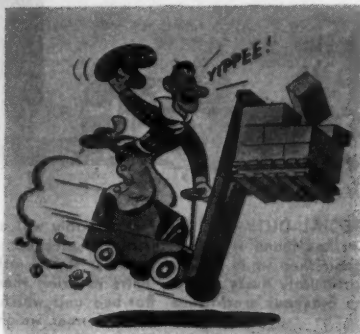
At some industrial plants, overhead hoists or cranes are available for unloading, but they experience difficulty in getting the hoist into the truck body for lifting up the load. Because of the variation in truck roof height, it is impossible to build into the plant structure a telescoping hoist track which would assist in accomplishing this unloading mechanically. For this reason, certain limits should be placed on truck heights, so that the roof would be standard, and such mechanical devices could then be provided.

Thought should also be given to the possibility of building special truck bodies with overhead monorail track systems to handle certain loads. This has been done in the past by some utility companies but not to the fullest extent by commercial truckers.

Postwar Requirements

However, more consideration of the possibilities of using mechanical equipment for the loading and unloading of trucks will be required in the postwar era. Space should be pro-

Fork Truck Tips



(Courtesy U. S. Navy)

Cowboys generally work in wide open spaces, but industrial plants, production buildings and warehouses do not afford these wide open spaces. Therefore, not only does cowboy driving of the truck cause heavy maintenance on the equipment, but it risks lives and damage to materials.

vided for carrying two-wheel hand trucks, dollies and other simplified mechanical handling units without interfering with the placing of the load inside the body. This can be done similarly as provisions have been made for handling skids boards, spare tires and other accessories.

A number of trucks will have to be provided with winches and power take-offs, which is also auxiliary materials handling equipment. Of course, these would not be as frequently used as the standard bodies but provisions

must be made in the truck design to incorporate these units wherever possible.

Industry Standards

There is no doubt that certain standards will be required for various types of industries or truck requirements. For example, light delivery trucks do not need to be as high or as wide as the large over-the-road highway equipment. Beverage companies would have a different loading and unloading requirement than laundry trucks.

Consequently, these should be put into a class by themselves, and not allowed to interfere with the uniformity or standardization of over-the-highway equipment. If the furniture movers and furniture warehousemen require a certain low type of platform on their trucks for loading, then let this be standardized for this particular industry.

It is doubtful whether it would ever be possible to get one standard type of truck for all hauling operations. If the truck manufacturers would develop standards in accordance with the industries being served, it is felt that definite progress can be made in the standardization of trucks so that uniform handling methods can be used in industrial plants being served, which will materially reduce the cost and time required for loading and unloading shipments.

Coordination Needed

No one company can determine the standard. Therefore, it is an activity to be taken up by the trucking associations, the users and the manufacturers right now in order to have these standards developed and incorporated in the new designs of trucks and truck bodies which will be made available in the postwar period.

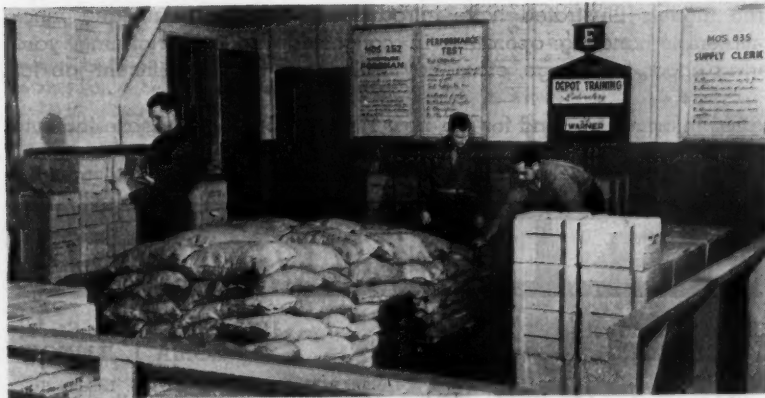
Much of the present equipment is so badly worn that it will have to be replaced and if a standard is developed now, it can be immediately put into effect and all new equipment can be built to these standards.

This would bring about a quick conversion to the new standards, and would also permit architects and engineers to plan their new buildings and convert their old buildings to fit these new standards. There is no better time than right now to start this important work. All shippers are going to want to reduce their handling costs and modern materials handling methods are going to be used more than ever.

Earns Fourth Star

Anthony Co., Streator, Ill., hydraulic hoist dump bodies and motor truck equipment, has the distinction of being first in its industry to receive the coveted Army-Navy "E" Award, as well as the honor of having the fourth Star.

Learning Inventory



U. S. Army News Photo

CAMP LEE, VA.—Under the watchful eyes of Maj. T. S. Gwynn, Jr., supervisor of the Quartermaster Depot Supply School at Camp Lee's Army Service Forces Training Center, students of the school practice the proper method of inventory for supplies in the storage division of the school's training laboratory. Miniature boxes and sacks simulate real supplies.

Distribution Talks Are Planned

Los Angeles Chamber of Commerce domestic trade committee announced a series of seven conferences to be held during the first four months of 1945 at which will be presented studies in the entire field of marketing.

Conducted by the sales council, the program is designed for wartime industrialists who are unfamiliar with peacetime distribution problems. Marketing authorities of various large Southern California industrial firms will serve as lecturers. (Herr).

Resistance Welding Education Plan

In order to broaden the scope of its service to metal working and fabricating industries, the Resistance Welding Mfrs. Assn. has inaugurated a program of cooperative educational activity on resistance welding subject. Recent metal industry surveys have shown that a very large percentage of those firms now using resistance welding in production are planning definitely to do more. Main objective of the educational program will be to encourage and assist this expanded use by making more widely available a knowledge of advances in design, in welding techniques and in fabricating procedures which have been made during the war production period.

Postwar Need for Efficient Handling Cited by Towmotor Head in Interview

Wartime developments in the handling of materials in plants have disclosed potential savings in time, manpower and costs which should assure activity for manufacturers of mechanical handling equipment in the postwar period, according to Lester Sears, president of the Towmotor Corp., Cleveland, in a recent interview published in the *Chicago Journal of Commerce*.

Use of Towmotor fork trucks and similar handling equipment has permitted increases as high as 400 per cent in tonnage handled per man hour, Mr. Sears said. Increase cost-consciousness installed by these wartime achievements should be reflected in large postwar demand for modern types of handling equipment, Mr. Sears said.

"War has proved that the movement of materials is a function of tremendous importance," Mr. Sears said. "This recognition assures materials handling of an increasingly prominent place in peace time production."

"Spurred by incessant demand, all operations contributing to production have been studied, surveyed and stop-

watched. The savings in time, manpower and cost provided by modern mechanical handling methods have convinced most executives that use of these methods is essential to efficient operation.

"It seems to us significant that reports are continually reaching us from Army and Navy users speaking of as high as 400 per cent increases in tonnages handled per manhour, and as much as 200 per cent added to the storage capacities of floor areas by Towmotor fork lift trucks.

"Likewise, we hear glowing reports from war production plants. For example, one plant producing hobbing machines is handling four times its prewar tonnage with half the manpower and half the cost; another producing brass ordnance and allied products has effected a 90 per cent manpower saving on one important loading operation.

"These are only a few instances of many regularly encountered which indicate clearly that industry is only beginning to become cost-conscious where handling operations are concerned."



COPPER-OXIDE CHARGERS

REDUCE MATERIAL HANDLING COSTS

G-E Copper-oxide Battery Chargers located in truck working areas save time, labor and battery power. They're designed to meet the exacting charging requirements of large industrial electric truck batteries as well as the smaller requirements of batteries used in motorized hand trucks.

Completely automatic, G-E Copper-oxide Chargers are easy and economical to operate. The truck driver sets a simple control and the charger "takes over." It delivers a charge then shuts itself off. They're low cost, flexible and require little maintenance.

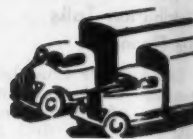


For complete information, write to Section A355-111, Appliance and Merchandise Dept., Bridgeport, Conn. Ask for the new truck charger bulletin—publication No. 52-46.

BUY WAR BONDS AND KEEP THEM

GENERAL ELECTRIC

Motor Cargo ...



Conservation Still Vital in Trucking Industry

Repair parts, gas and tires remain critically short; serious shortage of lead necessitates greater public conservation of batteries; equipment replacement dubious on any large scale for motor carriers.

OWNERS of passenger automobiles, trucks and buses will face, during 1945, the hardest period since the war began—with 1,500,000 more passenger cars breaking down during the year; with gasoline and tire supplies remaining critically short; and with the serious shortage of lead necessitating greater public conservation of batteries, the Office of War Information says in a report which reviews and supplies new data on current automotive problems.

The report, which discusses gasoline supplies; shortages of tires and replacement parts; rapid obsolescence of war-burdened private cars, trucks and buses; the probability that greater reliance will have to be placed on thousands of additional "share-the-ride" pools; and increasing military demands, was prepared from material made available by the Office of Defense Transportation, War Production Board, Office of Price Administration, Petroleum Administration for War, Foreign Economic Administration, Department of Commerce, Department of Agriculture and the Public Roads Administration.

Gasoline Situation

Although production of all types of gasoline is at record level and every effort will be made to increase production, civilian supplies will at best continue unchanged during 1945 or for the duration of the European war, provided military demands for gasoline and petroleum products are not increased and the transportation problem does not become more critical. Consumption of gasoline during the fourth quarter of 1944 exceeded allocations, thereby reducing the nation's reserves.

Tire Situation

(1) Production of synthetic rubber in 1945 is currently scheduled at more than 1,000,000 long tons; (2) Military requirements for heavy duty tires have jumped 30 per cent; (3) Tires for civilian trucks and buses will be short, probably available to Priority I vehicles only; (4) B and C drivers may anticipate stringent screening of needs and the possibility of a small increase in tire allocations over 1944;

(5) Rayon cord requirements will not be met; smaller size truck tires will have to be made with cotton cord, which in turn will vie with Army tentage demands; (6) Manpower problem is still critical; (7) Crude rubber supply is dwindling below 98,000 tons; (8) A \$70,000,000 government-financed expansion program for truck tire manufacturing is under way and will add roughly 25 per cent to the nation's total tire production capacity; (9) Emphasis continues on conservation of tires by both civilian and military users.

Truck Situation

The 1945 production program has been established as 869,212 trucks of all weights and categories (including half trucks and armored cars), or about 60,000 more than the comparable 1944 program. An important increase in the new program is that of 40,000 light truck units for civilians whereas there was no light production for civilians in 1944. The 1945 production will be allocated as follows: ODT, 186,792; FEA, 56,511; Maritime Commission, 675; Canada, 55; Off-Highway use, 1416. The balance represents direct and indirect military allocations. The 1945 truck program may be subject to change with revisions in military requirements.

WPB's estimated 1945 truck pro-

gram may be summarized as follows:

Light trucks—296,985. By quarters—69,005, 77,494, 75,830, 74,656.

Medium trucks—184,436. By quarters—50,411, 45,624, 44,348, 44,053.

Light heavy trucks—322,734. By quarters—82,096, 80,756, 81,047, 78,835.

Heavy-heavy trucks—65,057. By quarters—19,992, 18,055, 15,430, 11,580.

All trucks—869,212. By quarters—221,504, 221,929, 216,655, 209,124.

The 1945 commercial trailer program, important to both industry and transportation, was announced by WPB by quarters as follows:

First quarter, 7232; second quarter, 5000; third quarter, 5000; fourth quarter, 5000; total for year, 22,232.

Less than one fourth of the motor trucks estimated as needed to meet essential civilian transportation requirements during 1945 will be produced and distributed to commercial operators. Authorized civilian program amounts to 186,792 light, medium, light heavy and heavy trucks or 21.4 per cent of ODT's stated requirement of 773,935 vehicles.

Batteries

Currently the greatest threat to U. S. transportation, military and civilian, comes from the shortage of lead, material used in the manufacture of batteries. A decreased lead supply will require a 40 per cent cut in metal available for civilian batteries.

The 1945 lead supply will be approximately 20 per cent below requirements, it is estimated. Curtailment of lead construction for all non-military uses seems to be unavoidable. Lead assigned for civilian battery construction may be cut from about 224,000 tons in 1944 to 143,000 tons in 1945.

Spare Parts

Production of permitted spare parts for civilian needs was accelerated in 1944 to reach an all-time record value of \$750,000,000, it was revealed by the WPB Automotive Division. Production jumped from approximately \$162,000,000 in the first quarter to about \$210,000,000 in the fourth quarter.

Reports L. & D. Claims Have Jumped 67% Since Start of War

Since the outbreak of the war, loss and damage claims on hauled freight pyramided from 5 per cent in 1939 to 72 per cent in 1944. R. A. Schneyer, manager, claims department, Pacific Freight Lines, declared in a talk on "The Handling of Freight by a Large Common Carrier," at a recent meeting of the Los Angeles Automotive Council.

Mr. Schneyer declared that a policy has been adopted under which, for checking losses in shipments of liquor and cigarettes, dock managers personally check loading and unloading and sign the bill of lading. (Herr).

ter. An additional load, at least as great as the civilian, was placed on the industry to provide spare parts for military use, officials said.

The high rate production is expected to continue throughout 1945, WPB said. For comparative purposes, the Automotive Division revealed that 1943 production of these "functional" spare parts totaled \$440,000,000 while in 1942 it was \$330,000,000.

Maintenance Exhibit in Los Angeles

The Los Angeles Automotive Council is making arrangements to hold a truck maintenance exhibition at 425 E. 25th St., Los Angeles, March 28 to 31. ODT approval has been given.

The exhibit will be laid out as a wartime truck maintenance display of various methods of keeping old equipment in operation and newly devised ways of transporting war materials in the face of parts and tire shortages.

An added feature will be a display of new and postwar improvements in truck parts and equipment. (Herr.)

Incorporated

Articles of incorporation have been issued to Pacific Coast Distributors, 5,000 shares, no par. Directors are Harry Wank, N. Holbrook and N. Raphael, all of Los Angeles. (Herr)

Motor Transport Groups in England Organize National Road Federation

The outlook for highway transportation in England for 1945 is reported to be vastly improved by the increased ability of motor transport to act as an entity through a recently created National Road Transport Federation. This organization is made up of three autonomous constituent groups, the Road Haulage Assn. for for-hire carriers, the Traders' Road Transport Assn. for auxiliary users and the Passenger Vehicle Owners' Assn.

The associations for for-hire carriers and auxiliary users are reported to be powerful unified bodies representing a large number of operators in England, Wales and Scotland, but organizers of the national group felt

the need of a single spokesman in dealing with some highway transportation problems.

The newly-formed passenger association is admittedly smaller but will act in conjunction with the Public Transport Assn. representing owners of four-fifths of the motor bus fleet in Great Britain and the Municipal Transport Assn.

Commenting on the new organization "Modern Transport," a London trade publication, states: "The road vehicle user has now an opportunity, through such publicity organization as the Federation may set up, of presenting his case to the community."

Manpower Information Available from ODT

Information on manpower problems relating to personnel employed or needed by commercial motor vehicle operators is available through district and field offices of the Office of Defense Transportation, the ODT has reminded truck, bus, local transit, taxicab and vehicle maintenance establishments.

Pointing out that manpower shortages are seriously affecting highway transportation, the ODT said that digests of recent regulations issued by Selective Service and the War Manpower Commission are being made available to ODT regional, district and field offices for the assistance of various motor transport operators.

On the home front, too, it's a "war of movement"

Any newspaper war map, picturing fast changing battle fronts, is a reminder of what military men mean when they say this is a "war of movement."

But movement *over there* has been made possible only by essential movement of workers and materials *over here*. Any roster of victory vehicles will be incomplete without a full listing of the vans and trailers kept moving over America's highways.

America can well be proud of the men who have kept these vehicles rolling despite war time handicaps.

THE GERSTENSLAGER CO.
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WOOSTER, OHIO
TRAILERS AND CUSTOM-BUILT BODIES FOR VANS AND TRUCKS



Private Operators Allege For-Hire Carriers Seek Monopoly in Transportation

MORE than a billion dollars a year will be added to consumer costs if business and industrial organizations are deprived of their customer delivery systems, as has been proposed to the Interstate Commerce Commission, speakers warned last month at the sixth annual meeting of the National Council of Private Motor Truck Owners at the Pennsylvania Hotel, New York. Loss of a million jobs would result from the same cause, according to statistics offered by the organization to uphold allegations that public "for-hire" carriers are attempting to create a monopoly in transportation.

"Serious economic consequences would follow withdrawal from the producers, manufacturers, distributors, merchants and other citizens of their right to own and operate facilities for transportation of their own goods," said L. F. Orr, chairman of the council committee on transportation development.

"It is, not the competition from privately operated facilities that con-

cerns the proponents of a new commodities clause in the existing law, so much as it is the potential threat to the existing system of arbitrary rates, which lies in the inherent economics of operations by producers and others to fit their own particular needs."

Privately owned units represent 87 per cent of all trucks in use, Mr. Orr pointed out, adding that of the total property-carrying commercial motor vehicles certified by the Office of Defense Transportation, farmers operate 35 per cent, industry almost 30 per cent and business enterprises 14 per cent.

"Office of Defense Transportation checks show that intercity common carriers use almost five times as many road miles per vehicle as the farm vehicle and about three times as many as the industry-operated unit," according to a summary by the transportation development committee.

"Those who advocate a commodity clause would have the private motor truck entirely sabotaged simply because less than 5 per cent of its opera-

tions are in competition with the intercity for-hire carriers, and then only under conditions not truly competitive."

The council insisted that any plans tending toward a monopoly in transportation should be opposed and that legal barriers to free flow of traffic through States be removed.

Emphasizing the dwindling supply of manpower, the council declared "we are scraping the bottom of the barrel to obtain the necessary workers to carry on transport vital to the national war effort." By resolution it was urged "that the War Manpower Commission, the Selective Service System, the Office of Defense Transportation and all other interested agencies accord the gravest consideration to the reasonable minimum needs of manpower for private motor truck operation, including distribution."

R. C. Haven, chairman of the committee on highway safety, and Arthur C. Butler of the Automotive Council of War Production stressed the need for reducing accidents.

Truck Able to Meet Legal Requirements In All 48 States Doesn't Exist, ATA Says

The truck has not been built that can operate legally in every state in the union, spokesmen for the American Trucking Assn., Inc. declared last month in explaining the ATA's current campaign to abolish conflicting state regulations concerning trucks.

As a result of these state laws, the association contends, the national motor transportation system is unable to perform at maximum efficiency, and strength is being sapped from the country at a time when unity and singleness of purpose are vital.

The Interstate Commerce Commission has no power to rescind or prevent these state laws, and despite many protests from high government officials, Congress has not passed any legislation giving the government power to smash size and weight bottlenecks.

"A bill was proposed three years ago according to the Chicago *Journal of Commerce* which would provide for ICC hearings on complaints, and give the ICC power to prescribe relief, with enforcement in hands of both the national and state governments, but it did not pass.

"The ICC, itself, conducted an exhaustive, four-year survey of the problem, and issued its findings in Aug., 1941. The report found:

"1. Many state size and weight laws are barriers to the free flow of interstate commerce.

"2. The public is footing the bill in the form of higher costs for motor

transportation and less efficient service.

"3. The federal government should step in and prescribe relief on clear proof that obstructions do exist.

"The report also said state size and weight restrictions on many of the main highways, which bear the great majority of truck traffic, probably are less liberal than is necessary for protection of the highways and for public safety.

"The limitations imposed by a single state," the report stated, "may and often do have an influence and

effect which extend, so far as interstate commerce is concerned, far beyond the border of that state, nullifying or impairing the effectiveness of more liberal limitations which relate to size and weight."

Trade barriers assailed by ATA include all arbitrary legislative or regulatory enactments designed or operating to prevent the proper use of highways in interstate commerce. Some, it says, are created by archaic and unscientific maximums of height, weight and length; others by refusal of certain states to honor compliance by motor carriers with laws or regulations of the carrier's home state, particularly with respect to license tags, fees, lighting and safety regulations, and similar requirements.

Truck-Leasers Form National Assn.

A nation-wide association of independent truck leasing companies has been incorporated under the name National Truck Leasing System, it was announced last month in the Chicago *Journal of Commerce*. Seeking to promote greater interest on the part of business organizations in the leasing of trucks after the war, the National Truck Leasing System is formulating plans to provide truck leasing service at any point in the United States at which such service is desired by any operator.

Charles P. Clark, vice president of Columbia Terminals Co., St. Louis,

has been elected president of the organization. Other newly elected officers are: John W. Black, president of Dixie Drive-It-Yourself, Inc., Birmingham, Ala.; vice president, Howard Willett, Jr., vice president of The Truck Leasing Corp. of America, Chicago, treasurer, and Ray A. Munder, president of Yellow Rental, Inc., Philadelphia, secretary.

These officers, together with Fred P. Baker, president of Baker Truck Rental, Inc., Denver, are also directors and comprise the association's executive committee. Headquarters are at 540 N. Michigan Ave., Chicago.

Navy Commends Trucking Industry

In recognition of the American trucking industry's efficient handling of war freight for the U. S. Navy, the nation's motor carriers have been commended by Rear Admiral W. B. Young, chief, Navy's Bureau of Supplies.

In a telegram to American Trucking Assn., Inc., Admiral Young said:

"Efficient American transportation facilities of which the truck lines are a vital link have contributed immeasurably to the success of Allied military and naval operations in every war theatre.

"Materials must arrive at factories and shipyards on time if production schedules are to be met. Supplies and equipment must arrive at embarkation docks on time in order that continued requirements of our fighting forces may be met.

"The operators and employees of the truck lines are to be commended for the fine job they are doing for the Navy.

Wabash Cement Sold

Universal Atlas Cement Co. has purchased Wabash Portland Cement Co., Osborn, O., idle for more than a year, which will be operated as the Osborn plant of Universal Atlas following improvements. (Kline)

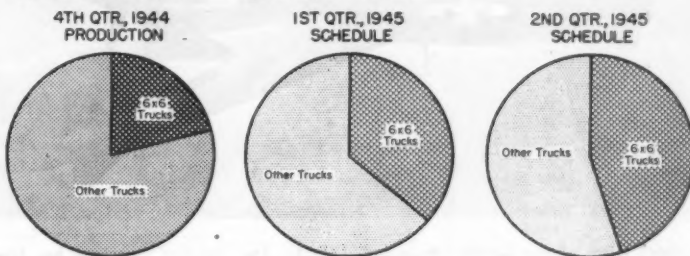
Army's Big Demand for Heavy Trucks Held Likely to Hit Civilian Needs

The following survey of progress and problems in the production of trucks, prepared under the direction of Hiland G. Batcheller, Chief of Operations, War Production Board, was made public last month by WPB.

"Although production of both heavy-heavy and light-heavy Army

"On the basis of the latest approved program (Dec. 19, 1944), trucks might appear to be candidates for removal from the critical list, but a new and considerably higher total for 1945 has been requested by the Army and is receiving consideration, WPB explained. The Dec., 19 program calls

Emphasis Shifts from 4x2's, 4x4's, and 6x4's.



trucks reached new highs in December (6185 heavy-heavies and 21,358 light-heavies), total production in each group fell substantially behind the original schedule for the year set in Nov., 1943, 25 per cent behind for heavy-heavies and 20 per cent for light-heavies.

for only a slight increase in light-heavies in 1945, to a peak rate of 22,000 monthly, and a lower rate on heavy-heavy trucks than in any month since last September. Even without allowing for the prospective raising of sights, however, the production job on

(Continued on page 114)



HEAD OFF TROUBLE with expert, thorough-going INTERNATIONAL TRUCK SERVICE

An ounce of prevention is worth a ton of cure these days, in any trucking operation.

See your International Dealer or Branch NOW, to arrange a convenient service schedule that will keep your trucks out on the road and out of the shop.

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TO MEET EXACT TRUCK NEEDS

PLATFORM and HAND NOSE TRUCKS for various Warehouse and Cargo use.

Write for details and prices.



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Orangeville (Col. Co.), Pa.

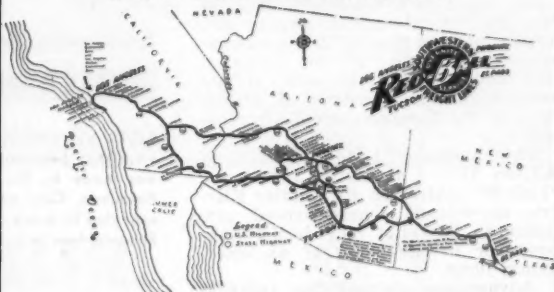


Fig. 598-4
A popular Warehouse Truck

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Curtiss-Wright XP-55 "Ascender" Declared Revolutionary to Aviation



A FLIGHT-VIEW of the Curtiss "Ascender" (XP-55). The "tail-first" airplane has forward control surfaces and rudders near the wing tips. The Allison engine is in the rear of the airplane and drives a Curtiss Electric 3-blade propeller.

EXPERIMENTAL development by Curtiss-Wright of one of the world's most unusual fighter plane designs, a fast and highly maneuverable pusher type airplane which appears to fly backward, was announced recently by G. W. Vaughan, president, Curtiss-Wright Corp.

The revolutionary fighter plane, officially designated as Curtis XP-55 and called the "Ascender," has its power plant and wing surfaces mounted to the rear of the pilot, while elevator controls are in the extreme nose, a direct opposite of conventional type aircraft.

The Curtiss "Ascender" is one of a number of types developed experimentally for the Army Air Forces which will not go into quantity production but which are expected to make a significant contribution to future aircraft design projects of the Army Air Forces.

The XP-55 developed by Curtiss-Wright's Airplane Division at its St. Louis plant, is a low-wing, all-metal "tail-first," single-engine, single-place, pusher, pursuit plane ("X" stands for experimental and "P" for pursuit). Its rudders, near the ends of the swept-back wing, instead of at the rear of the fuselage, are fully movable.

The "Ascender" is powered with an Allison 1275 h.p. engine and has a "kickoff" control on its Curtiss Electric three-blade constant-speed propeller so the pilot may jettison the propeller in the event of an emergency jump.

Advantages claimed for tail-first aircraft of this type are: speed equal to or greater than conventional design airplanes of the same horsepower; improved longitudinal control and maneuverability; improved forward visibility and search view; it is quieter, because engine is behind pilot; guns, being clustered in nose of plane, fire straight ahead and need not be

(Continued on page 102)

Braniff, PCA Set New Flights

Both Pennsylvania-Central Airlines and the Braniff Airways have made public schedules along new routes. PCA inaugurated daily nonstop service between Chicago, Ill., and Detroit, Mich., in February.

C. Bedell Monroe, PCA president, says that establishment of this service not only expedites the great amount of essential traffic between these cities, but that PCA, as a result, will now provide direct, through service to and from Chicago, Cleveland, O., Pittsburgh, Pa., Akron, Youngstown, O., Washington, D. C., and Norfolk, Va.

Plan proposed by Braniff to create service between the western half of the United States and the Southeast and Eastern Seaboard was announced by Charles E. Beard, vice president.

Braniff filed two CAB applications: One to extend its service east of Memphis to Atlanta by way of Chattanooga, Tenn., and the other to provide service east of Memphis to Washington, D. C., Philadelphia, Pa., and New York, N. Y., via Chattanooga, Charlotte, N. C., Raleigh, N. C., and Norfolk, Va.

Gas Turbine Developed by War Needs Threatens to Replace Other Power



AIDED by specially built rockets, navy planes are now able to take off on much smaller runways than previously was possible. Announcement of the new "Jatos" (Jet Aided Take Off) was made by the navy department. Developed by the Aerojet Engineering Company of Pasadena, Cal., and manufactured by General Tire & Rubber Co., these new rockets are expected to bring Japanese held islands much closer to American bomber and fighter planes. Pictured here is a Navy Avenger, specially powered for the take off by four 330 horsepower rockets.

USES for gas turbine power, which since the advent of the war has been undergoing rapid new development, will be unlimited when knowledge of it is under control, according to scientists closely associated with work in this field.

More familiarly known to the general public as jet propulsion or as the

motivating force behind the "rocket plane," gas turbine power is regarded as a newcomer in the power realm, although the principle around which it revolves has been studied and worked upon since early days.

Weakness in its development has been in metallurgy, since no metal

(Continued on page 102)

Public Warehouses And Air Cargo

(Continued from page 28)

in large quantities, even by slow methods of transportation, rather than in smaller quantities by faster carriers.

During the past 30 years national distribution through public warehouses, particularly general merchandise warehouses, has been viewed with increasing favor by manufacturers.

Distribution involves the shipping of merchandise at regular intervals, in quantities never smaller than a carload, to public warehouses located at favorable freight-rate breaking points to be forwarded in small lots to nearby points, either at once or soon after arrival at a warehouse. This has made public warehouses something more than storage plants. They have now become links in the distribution of many kinds of commodities. They can expect to expand their distribution activities in the future as all the reasons why their services can be economically used become more generally accepted by manufacturers.

Public Warehousemen need not worry about air cargo reducing their usefulness. What they must do is to watch for opportunities to fit air cargo into their own and their clients' activities. In this manner warehouses can become an adjunct to air as they have to other forms of transportation by:

1. Handling pick-up, delivery and consolidation services for the airlines in their cities.
2. Operating airport warehousing facilities on a lease or contract basis.
3. Developing packing and re-packing services in connection with air cargo re-shipments.
4. Supplying bonded warehouse services at ports of entry for international air transportation. These will be inland points in many instances not now supplied with such warehouse facilities.
5. Becoming the warehousemen for the airlines' own stocks of supplies and the like. Airlines do not have large investments in storage space at terminal airports so as time goes on they may become important public warehouse customers.
6. Arranging with airlines to take over shipments sent on an airport-to-airport rate basis for storage after expiration of "free time."

TREAT YOUR PREFORMED WIRE *Right*

RIGHT AND WRONG WAY TO HOLD WIRE ROPE

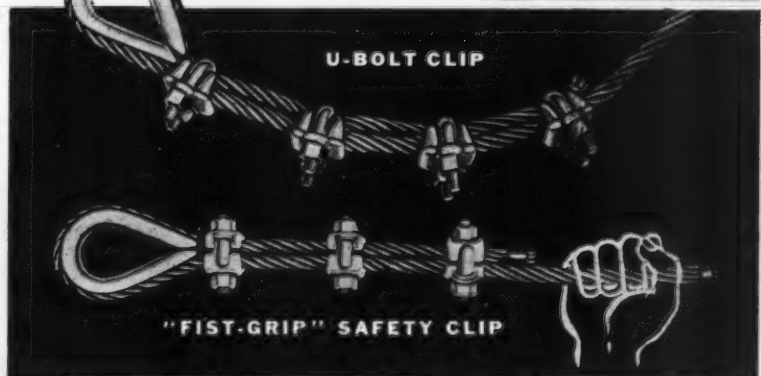
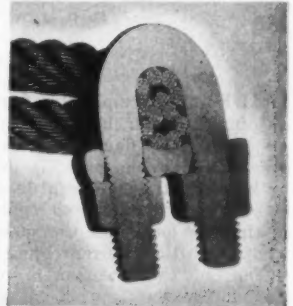
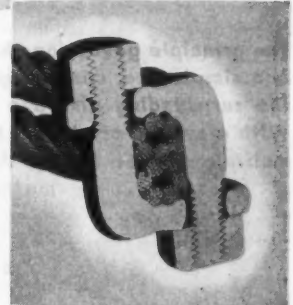
Examine these cross-section views of a "Fist-Grip" Safety Clip and "Finger-Pinch" U-bolt. (Each tightened to exactly the same tension with a torque-indicating wrench). Notice how the "Fist-Grip" clip holds the rope evenly with only the slightest flattening . . . how the U-bolt crushes the rope out of shape as evidenced by the distorted hemp center under the "U".

"PREFORMED" ROPE DESERVES "FIST-GRIP" CARE

When you pay extra for the advantages of "Pre-formed" rope, protect your investment by using Laughlin Safety Clips that keep ropes straight and strong. Get these other features too . . . the only clips with drop-forged bolts — 3 do the work of 4 U-bolts — they can't be put on backwards.

If you haven't tried "Fist-Grip" Clips . . . purchase a few to test. See how much faster they can be installed . . . how much better they work . . . how much you save in clips, time and money.

Distributed through mill, mine and oil field supply houses. Send for Laughlin's catalog of wire rope and chain hardware. Address Dept. 16, The Thomas Laughlin Co., Portland 6, Maine.



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Carbon Dioxide As Fire Protection For Fur Storage Vaults

The principle governing the extinguishment of fire by carbon dioxide is a simple one, consisting of cutting down the supply of oxygen in the surrounding air to a point at which combustion cannot exist. With a system of storing the gas under high pressure and providing multiple nozzles for its discharge this is said to be effected in a matter of a few seconds.

By JANET NEWKIRK

WHEN a completely "fireproof" building, which contains no heaters, furnaces, flammable liquids or other ordinary hazards, is destroyed by fire with the additional loss of \$3,000,000 worth of stored contents, it is time to look into the question of what constitutes "fireproofing."

The fact that the type of construction and materials used cannot alone fill the bill was forcefully demonstrated in the case of the Yale Cold Storage Corp., New Haven, Conn. This was a so-called fireproof building, housing fur-storage vaults in which a temperature of approximately 42 deg. F. is maintained by a system of air-conditioning employing recirculating blowers.

Cause Unknown

On Sept. 24, 1943, one of those unpredictable mishaps occurred which are responsible for so many tragedies. Whether an electric light fixture had come into contact with a stored garment, causing the latter to become hot and then smoulder, is not definitely known. However, it is conjectured that some such thing occurred and that the smouldering went on for some 26 hours before the rising heat caused fire to break out among the furs closely hung on the storage racks. Fanned by the recirculating blowers, the flames rapidly spread through the grilles or louvers situated between floors to permit circulation of chilled air, and the roaring conflagration which resulted kept firemen at a distance, caused the walls to buckle and collapse, and completely

destroyed building and contents. The ensuing 30,000 claims against insurance carriers totalled in the neighborhood of \$3,000,000 and constituted the largest aggregate claim ever presented in a loss of that type.

The loss covered by the insurance companies represented only a part of the total. The owner stood an additional loss in connection with the building itself, which was only partially covered. In addition, a year's business was swept away, and even

when rebuilding could be completed, a problem loomed in the question of obtaining further insurance.

Carbon Dioxide System

Under the circumstances, it was essential that the new premises should incorporate the finest principles of fireproof construction and fire-control engineering. The owner therefore consulted leading fire-prevention organizations and engineers, and after careful investigation of every type of installation offered, it became evident that the greatest reliance could be placed in a high-pressure automatic carbon dioxide fire-extinguishing system manufactured by Walter Kidde & Co., Inc. Several portable carbon dioxide extinguishers for quick control of any possible smaller blaze around the office, receiving department or corridors, rounded out a comprehensive plan.

The principle governing the extinguishment of fire by carbon dioxide is a simple one, consisting of cutting down the supply of oxygen in the surrounding air to a point at which combustion cannot exist. With the Kidde

Receiving department of Yale Cold Storage Corp., where furs are examined and cleaned before storage. Portable carbon dioxide fire extinguisher stands within easy reach.



system of storing the gas under high pressure and providing multiple nozzles for its discharge, this is said to be effected in a matter of seconds.

Element of Speed

As is well known, the element of speed is the critical one in fire-fighting. Every fire is a small one in the beginning, and if it is not allowed to get beyond that point, damage is held to a minimum. Fire-control engineers have found that the important factor in such smothering agents as carbon dioxide is rate of discharge. The amount of gas required is computed from figures determined by the National Fire Protection Assn., and depends upon the cubic feet of space to be protected, and the type of hazard existing. Gasoline fires can be extinguished with less carbon dioxide than acetylene, for instance.

In the case of certain types of hazards where smoldering is likely, it is advisable to provide a reserve supply of the gas, either for the purpose of "bleeding" it into the protected space, as in the case of cargo holds aboard ships; providing a delayed discharge to maintain an inert atmosphere over a prolonged period, as during the deceleration of generators; or in order to afford a secondary supply in case another fire should break out before the used cylinders could be recharged.

This reserve supply can readily be furnished in a high-pressure system from supply cylinders which can be supplied in any required number, manifolded in any combination, and discharged or recharged individually or collectively, as specific circumstances may dictate.

Carefully Engineered

For this reason, Kidde extinguish-

ing systems are engineered for the particular premises they are to protect, taking into careful account the types of hazards encountered. This has been true of the Yale Cold Storage Corp. installation; the storage building contains four vaults, varying in size, and requiring from 300 to 1000 lb. of gas each for maximum fire-killing power.

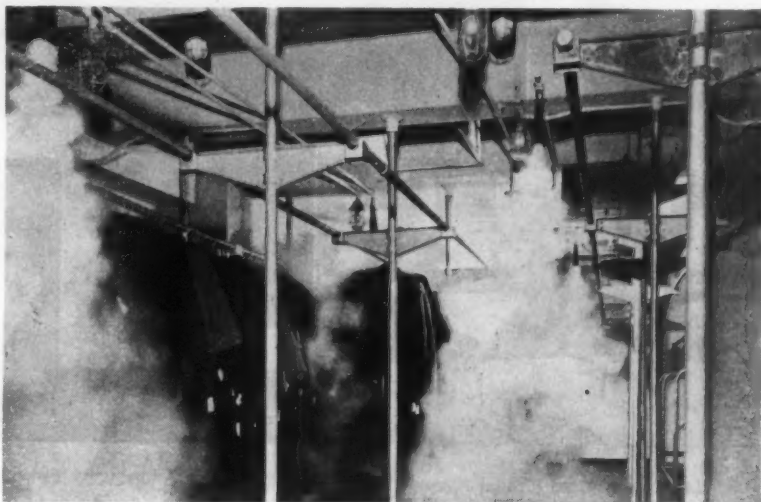
As the carbon dioxide is stored in cylinders containing 50 lb. apiece, this means a battery of six cylinders for the smallest space, and 20 for the largest. As the gas is automatically routed to the particular space afire and that space instantly isolated from the others in a manner to be described, no more than 20 cylinders would be required for any one fire.

What would take place should an actual fire occur was demonstrated on July 7, 1944, to a group of insurance experts, engineers and others, who inspected the component parts and witnessed their operation.

Control of Fire

The control of fire begins with its detection. To this end, 17 heat actuators are spotted about the vault ceilings. These operate on the rate-of-temperature-rise principle, one of the speediest and most reliable known.

Air, warmed by the first smoke or smoldering, rises to the ceiling, causing an increase of pressure within the sensitive diaphragms contained in the actuators. This pressure is transmitted through tubing to the valve



Same vault, two seconds after discharge of gas. Entire space is quickly blanketed, producing inert atmosphere in which fire cannot exist. Carbon dioxide is stated to be non-toxic, dry and harmless to anything it touches.

Fur storage vault of Yale Cold Storage Corp., showing location of multiple nozzles.



frames located in the basement, dropping a weight at the directional valve guarding that space; a cable pulls the valve through a three-quarter turn, cutting the discs which seal in the carbon dioxide, and routing the discharge to the particular space afire. The gas immediately pours from the shielded nozzles hung at short intervals from the ceiling, in this instance, above the garment racks. Simultaneously, its passage through the tubing operates a pressure switch which shuts off the cold air blowers and also pressure trips which close the grilles between floors, isolating the scene of the fire, preventing ventilation, and escape of the gas.

From 5 to 8 Seconds

The officially clocked test was run several times, and showed that it took from five to eight seconds from the time the first wisp of heated air reached the actuators until the fire-

(Continued on page 116)

This is a call to America's Heart



Your Red Cross faces its greatest task

THIS is the most important appeal for funds in the history of the American Red Cross.

After three years of war the work of your Red Cross is greater than ever. It must serve millions of our fighting men abroad. Lonely men. Homesick men. Wounded men. The Red Cross lends a helping hand to the thousands of returning service men—sick, wounded—desperately in need of friendly guidance.

And remember, **YOU . . . and you alone . . .** keep the Red Cross alive.

There are no special funds to keep up its great humanitarian work. The money must come, as always, from the heart of America—you!

We must keep the Red Cross at the side of our fighting men and our wounded heroes. We must help the Red

**GIVE NOW—
GIVE MORE**

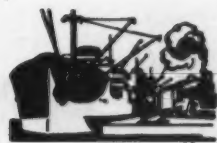
Cross in its vital job of sending food and medicine to war prisoners . . . aiding the ill and lonely overseas . . . collecting life-giving blood plasma. Every Red Cross worker is your personal messenger to your man in uniform.

Keep your **RED CROSS** *at his side*

★ Prepared by the War Advertising Council in cooperation with the Office of War Information and the American Red Cross ★

62—D and W, March, 1945

Waterways and Terminals ...



New Freight Loading Service in Boston

Republic Carloading & Distribution Co. and Gulf Carloading Division, Boston, have inaugurated a new receiving station at House 3, New Haven Railroad, Northern Ave., for receiving of all shipments except for California points. The new telephone number of House 3 receiving station is Liberty 7130. William J. McWha is district manager. (Wellington)

No Authorization To Sell Ships

The United States Maritime Commission and the War Shipping Administration have announced that they had received reports that various shipbrokers here and abroad were claiming to be authorized to negotiate sale of United States owned ships.

The Maritime Commission and the War Shipping Administration state that any such representations were wholly unauthorized and without foundation in fact.

Disposition of vessels constructed by the Maritime Commission depends upon Congressional action on the Ship Sales Bill, a postwar authorization.

Water Carriers' Use of Freight Cars For Foreign Voyage Affirmed By Court

The Supreme Court has ruled the Interstate Commerce Commission has authority to require railroads to permit use of their freight cars by a water carrier which makes voyages in

of vessels which carry loaded railroad freight cars. The firm operates out of Hoboken, N. J., Belle Chasse, La., and Havana, Cuba.

The Pennsylvania Railroad and 15 other rail lines asked the New Jersey federal district court to set aside an ICC order requiring them to permit use of freight cars by Seatrain. The district court ruled that ICC had authority to require the railroads to permit such use within the United States and its territorial waters, but did not have authority when the transportation went beyond territorial waters.

Justice Black ruled for the majority that the commission's order requiring car interchanges was within the agency's authority whether the movements take place within or without the territorial waters of the United States.

Bills of Lading

In regard to bills of lading the Interstate Commerce Commission has stated: "Bills of lading constitute a receipt for the property and a contract for its carriage. It is well settled that under the Interstate Commerce Act it is not the bill of lading alone which constitutes the contract between the shipper and the carrier, but it is the bill of lading plus the schedule and tariffs filed as required by law. * * * the consignor (shipper) must be presumed to know the terms of the bill of lading." *The Traffic Bit.*

foreign waters. Justice Black delivered the court's 8 to 1 decision. Justice Roberts dissented.

The ruling was given in a case concerning Seatrain Lines, Inc., operator

Labor Control Plan Held Effective

In the move to maintain Baltimore's record as the only large East Coast port which has avoided the use of Army labor battalions, Baltimore stevedores are now under a system of labor controls and penalties worked out jointly with labor and management representatives.

The system is already working satisfactorily among the longshoremen, it is said, and the plan is being worked or extended to other waterfront workers.

The plan, according to officials, including the Steamship Trade Assn., consists in freezing of the men in gangs, so that they become more accustomed to each other, thereby increasing the efficiency of the work. The plan is being carried out and "policed" by representatives of the International Longshoremen's Assn. (Ignace)

Sweden Great Lakes Service Planned

The postwar Sweden-Great Lakes direct service will be known as A/B Svenska Chicagolinjen, it has been made known. This line plans to build a 2,900-ton vessel which will have air-conditioned holds for the handling of perishable freight. Directors of the new enterprise are Ragnar Nilsson, of Westervik, Sweden; Mr. Palmquist, of the Thorden Line, and T. Bertoldy. (Kline)

Los Angeles Port Improvements for '45 To Involve Expenditure of \$44 Million

The Los Angeles Harbor Department has \$10,000,000 in its treasury earmarked for postwar port expansion, Eugene Overton, president, Los Angeles Harbor Commission, reports.

Because of war conditions, Mr. Overton stated, it has been impossible during the past few years to engage in harbor expansion work, but the commission, he disclosed, has aimed at building up as large a fund as possible against termination of the war to finance postwar port plans.

The commission has proceeded on a policy of preventing the government from taking over harbor owned lands through condemnation proceedings, Mr. Overton reported. Instead of selling the land to the government, the harbor department has issued long-term leases and "duration plus 6 months" leases, which has tied up most of the harbor under government control, making it futile to attempt to make definite postwar plans at this time.

War-time expansion of naval facilities at the Los Angeles-Long Beach harbor during 1945 will involve ex-

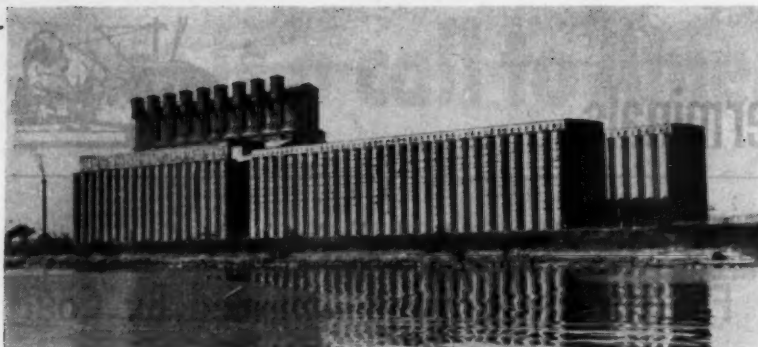
penditure of approximately \$44,000,000, many of which facilities will become partly available for non-government harbor activity at the close of the war.

Projects outlined by the Navy's public works department include \$17,000,000 worth of work now under way and additional projects in the designing stage costing \$27,500,000.

One of the projects which will figure prominently in postwar non-naval activities at the joint port is a \$14,000,000 access roadway and bridge across Cerritos Channel to connect Terminal Island with the mainland.

Other projects scheduled for construction in 1945 which will represent permanent harbor improvements after the war include the following:

A \$6,000,000 mole type breakwater extension on the seaward side of Terminal Island costing \$1,347,000; a four story reinforced concrete storage warehouse equipped with four portal cranes, costing \$1,363,000; and miscellaneous electrical and mechanical equipment for piers and shops costing an additional million dollars. (Herr)



Great Northern Elevator, Superior, Wis.

"One of America's Busiest Ports"

THE city of Superior, Wis., claims to be "one of America's busiest shipping ports," and a check-up of the facilities available bears out that claim, especially in the shipment and storage of wheat, flax, barley, rye, oats and corn.

Its eight giant grain elevators are listed as having a total storage capacity of about 30,000,000 bu., the largest of them, that known as the Great Northern Elevator "S," topping the list with 11,500,000 bu.; the second in size, the Globe Elevator, has a capacity of 5,000,000 bu., and the third, Farmers Union Grain Terminal Elevator, has 4,500,000 bu.

The Great Northern is said to be the largest elevator in the world. It consists principally of concrete bins. It is owned by Archer-McDaniels-Midland, Minneapolis; the Globe by the Peavy Co., Minneapolis; Farmers Union by the association of that name.

Grain for these elevators is received from the states of Minnesota, North and South Dakota, Montana and Western Canada, and is shipped principally to eastern points by vessels through Lake Superior and the straits, and the other lakes, but for

the past two years the grain received from Canada, about 8,000,000 bu. annually, has been shipped to central and southwestern states of this country, as far south as Texas.

In addition to the facilities for shipment of grain and other commodities from Superior by vessel, and their receipt at the elevators, the city has greater railroad facilities than any in Wisconsin, and more than most cities of its size or larger in other states, with eight major roads and one terminal railroad.

The city of Superior also handles quantities of other commodities.

The giant iron ore docks handled a total of 27,732,942 tons of iron ore in 1943; 14,925,013 tons in 1939 and 6,823,488 in 1938. In coal receipts, Superior was also at the front with 4,538,000 tons in 1943, as against 3,298,000 in 1939.

Other superlative figures, covering commodities handled, include the activities of the Twin Ports Co-operative Dairy Assn. of Superior, as follows: 1943 milk receipts, 39,000,000 lb. Butter manufactured, 1,100,000 lb. Powdered milk manufactured, 2,550,000 lb. (Hubel)

Reorganization of Boston Port Authority Proposed in Bill Now Before Legislature

A bill calling for the abolition of the present Boston Port Authority, creation of a new Authority with full power to take constructive action, and appropriations up to \$15,000,000 is pending before the Massachusetts Legislature. The recently organized Greater Boston Development Committee which had earlier announced plans to carry out numerous projects for the further development of the Metropolitan Area went into action when members of its executive committee filed the bill.

The main features of the bill as outlined by the Executive Committee are:

"This bill abolishes the present Boston Port Authority and sets up a new Authority composed of five members to be appointed by the Governor for five-year terms. It is arranged that the first five shall have their offices run out in terms of 1, 2, 3, 4, and 5 years, so that the reappointment will be for five-year terms, one each year. Compensation for each member would be \$50 per day when engaged in business for the Port Authority with a maximum of \$5,000 a year.

"This Port Authority would have jurisdiction over all property in the

Port of Boston, which includes all the area west of a line from Point Allerton, Hull, to Point Shirley, with the exception of the Logan International Airport. The airport does not come under this bill.

"The Port Authority would have the power to appoint a director, who will be the important man, and the Authority will pay him whatever salary is necessary.

"The Port Authority would have the right to regulate all commerce and industry within the Port of Boston: lease, buy, construct piers and other necessary facilities, with the provision that those facilities must be economically sound and necessary to the development of the Port.

"The Port Authority would have the power to advertise the port, solicit business, etc. It is modeled on the New York Port Authority.

"The bill carries an appropriation of \$15,000,000 to be met by a bond issue. The bonds will be issued on such terms as the Governor and the Council shall recommend to the General Court and as the authorities shall from time to time need, up to \$15,000,000. (Wellington)

Sailors Returning To Great Lakes

Great Lakes merchant seamen and officers who left their vessels when they tied up last fall and entered the offshore fleet of the U. S. Merchant Marine are beginning to return to the Great Lakes for the spring movement of vessels, War Shipping Administration announced last month.

The Recruitment and Manning Organization of WSA, responsible for the recruitment of the Great Lakes seamen, estimated that several thousand men responded to urgent pleas to help man offshore vessels. The majority were in the lower ratings, and were assigned to merchant ships during November and December of 1944.

"As fast as these Great Lakes seamen return to the continental United States from overseas voyages, we are reassigning or releasing them to return to their operators, unions or vessels on the Great Lakes," RMO officials said.

Baltimore Handling Increased Tonnage

It has been announced by the War Shipping Administration that "the port of Baltimore contributed importantly to the 1944 all-time record in shipping."

It was revealed by the War Shipping Administration that the port of Baltimore had accounted for 2,969,762 tons of the more than 25,000,000 tons of dry cargo dispatched from the Atlantic Seaboard, and for 533 of the 4,868 sailings recorded during the past year.

Only three ports, New York, Hampton Roads and Philadelphia shipped greater tonnage than Baltimore, it is stated, and the local port tied with Philadelphia for third place in the number of sailings.

It was revealed by Walter W. Schwenk, Atlantic Coast WSA director, that dry cargo shipments represented a 70 per cent increase over the 1943 record tonnage. (Ignace)

Cold Storage ...



Subsistence School Is Reopened by QM

Reopening of the Quartermaster Corps Subsistence School in Chicago has been announced by the Office of the Quartermaster General in Washington. Closed for eight years, the Subsistence School was reopened to provide necessary training for Quartermaster Corps officers who will be assigned to duty in overseas theaters of operation.

Commandant and director of the school is Col. Rohland A. Isker, U. S. A., who will also remain in charge of the Quartermaster Corps Subsistence Research Laboratory in Chicago, a post he has held since 1939, date of his transfer to the Quartermaster Corps.

Six officers, two enlisted men and 16 civilian consultants and teachers comprise the faculty of the Subsistence School. Classes of 20 commissioned officers of the Quartermaster Corps will attend the school for courses of instruction covering three month periods. The courses are designed to qualify the student officers in all phases of procuring, processing, inspecting, supervising, transporting and storing of subsistence supplies at overseas bases and stations.

300 Refrigerator Cars For Fall Delivery

Fruit Growers Express Co. has placed an order for 300 refrigerator cars with Mt. Vernon Car Mfg. Co., a division of H. K. Porter Co., Inc., Pittsburgh, Pa.

The cars are scheduled for delivery during the fourth quarter of 1945.

Wholesale Food Distributors Announce \$10,000,000 Refrigeration Expansion

In order to keep in step with the advancement of the field of transportation of perishables, which will become evident after the war, wholesale fruit and vegetable distributors have included in their postwar plans the spending of \$10,000,000 with which to increase refrigeration facilities.

John Van Arnum, acting secretary

"Floating Icebox"

American service men in the South Pacific may get a taste of ice cream as a result of the completion in California of what has been described as "the first all-concrete refrigerated cargo barge."

This "floating icebox" was recently completed and left the yards of the Concrete Ship Constructors at National City, Cal., destined for somewhere in the South Pacific. It was stocked with more than 1,000 tons of fresh meat, fruits, ice cream, and ice and was intended to supply fresh food to United States invasion forces during initial landing operations.

The York Corp. engineered and equipped the refrigerated cargo barge. (Gidlow.)

and traffic consultant, National League of Wholesale Fresh Fruit and Vegetable Distributors, in making the announcement for the league, declared that prior to entering the war, total carloads of produce originated on railroad lines made up 50 per cent of the movement of the vegetable and fruit crops. Trucks carried 42 per cent, with coastal vessels taking the other eight per cent. Putting this in terms

of ton-miles, the railroads hauled 75 per cent; trucks, 20 per cent and ships, five per cent. Water and truck transportation, Van Arnum pointed out, restricted as a result of the war, will again expand once peace is restored.

He also pointed out that in 1931 Class 1 railroads originated about 98 per cent of all fruits and vegetables, handling a total of 14,834,222 tons in 137,163 refrigerator cars for a total of 1,027,334 carloads. In 1943, the roads originated 859,587 carloads of 15,403,065 tons in 108,477 refrigerator cars. This, he says, was a reduction of 16.3 per cent in carloads with 20 per cent less refrigeration space.

Extent of increase in postwar water and truck hauling will depend greatly on the strides which the railroads make in improving their protective service facilities as well as the time schedules on which they will operate, the acting secretary said, adding, however, that he did not believe air freight would prove a strong competitor except in the transportation of luxury items and off-season commodities like early strawberries, which Northerners might wish in a hurry from Florida, Louisiana or Texas. The major perishables, such as onions, potatoes, apples and citrus fruits, however, would continue to be delivered by other means of transportation, he said.

Mr. Van Arnum's views on the need for more refrigeration have been endorsed by wholesalers from various sections of the country. Paul M. Williams, assistant chief of the fruit and vegetable branch, office of food distribution, War Food Administration, in urging more refrigerated space declared that there is a 25 per cent shrinkage in fresh fruits and vegetables between the time they leave the shipping point and reach the housewife's kitchen.

National Fisheries Institute

Preliminary organization of National Fisheries Institute, Inc., designed to promote and co-ordinate interests of the country's fish producers, processors, canners, and wholesalers, has been effected. A Delaware corporation, it will meet April 10 to select officers and formulate a program. Incorporators are: R. M. Meehan and Irving G. McCann, both of Washington, D. C., and Elliott Hudgins, Gloucester, Mass. (Kline)

Modernization of Refrigerator Cars Is Urged at Sessions of Produce Men

Modernization of railroad refrigerator cars was one of the important subjects considered by members of the United Fresh Fruit & Vegetable Assn. at their January convention in Chicago. No improvements in this type of rail equipment have been made in the past 30 years, it was stated. Thousands of new cars will soon be needed by railroads and private refrigerator lines and in view of this fact, the produce men have felt that their views on what is needed should be made known.

All day sessions of the Association's Refrigerator Car Committee were held during the convention, at which standards for construction of reefers suited to needs of shippers of perishable produce were discussed.

Participating in the meeting were representatives of the Assn. of American Railroads, the U. S. Dept. of Agriculture and some 20 other organizations vitally interested in better refrigerator rail transportation. No findings were made public. (Slawson)

How are you at Chopping Trees?



No, this is no joke. Many businessmen have volunteered to aid the paper shortage by spending vacations from their companies in the timber country, helping out on the man-power problem in the paper pulp industry.

Nor that you have the time to do this. Nor that tree-chopping is exactly in your line. But, until the man-power shortage in this vital industry is over, until our armed forces no longer are spread all over the world where food, ammunition and medical supplies must be shipped them in paper protection

wrappers, there is a chopping job you must do. You must chop the use of paper in your business.

Sure, you've done plenty of this in the past months. But right now the need for paper is greater than ever. So the government asks you again to examine paper usage in your firm, see if you can't make even further savings.

And don't forget that baling wastepaper and sending it to a reprocessing plant is a most important part of the paper conservation job.

Remember—
**PAPER IS
WAR POWER**



USE LESS PAPER — SAVE ALL WASTEPAPER

This advertisement contributed by this publication and prepared by the War Advertising Council in cooperation with the War Production Board and the Office of War Information.

SEAL — VALUABLE SHIPMENTS FOR — SAFE DELIVERY



★ Railroads and shippers can protect valuable merchandise and insure safe deliveries when Chicago Seals are used to prevent tampering.

For more than forty years, leading industries have standardized on Chicago Seals. U. S. Ordnance Departments use Chicago Seals regularly for wartime safety.

Whatever your requirements may be — from sealing meters, recording instruments or charts, etc., to sealing railroad freight cars and shipments, you will find the correct type of seal in Chicago's stock line.

We urge you — get details on tamper-proof seals by Chicago — write for new descriptive catalog just off the press. Act today!

CHICAGO CAR SEAL CO.

434-46 N. WESTERN AVE. BRUNSWICK 9400-01
CHICAGO 12, ILLINOIS

A SAVING AT EVERY TURN

DARNELL CASTERS

One of the great advantages of Darnell Casters is the permanency of service that goes with them. Maximum savings and efficiency is assured every user —

DARNELL CORP. LTD., 60 WALKER ST. NEW YORK, N. Y.
LONG BEACH, CALIFORNIA. 36 N. CLINTON, CHICAGO, ILL.



Equipment — Services — Supplies

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NEW, IMPROVED TRAILER CASTER



This new Bassick Caster is an improved type especially for service on power-pulled trailer trucks. It has . . .

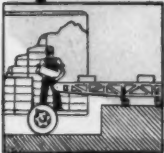
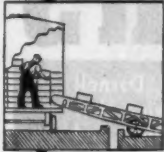
$\frac{3}{8}$ " diameter balls rolling, in machined raceways, on a $6\frac{1}{2}$ " diameter ball race. Timken roller thrust bearing. Heavy gauge steel plate in frame and top plate. Heavy-duty semi-steel or iron core rubber-tread roller-bearing wheels. Alemite pressure lubrication.

Bassick Trailer Casters come in 8", 10" and 12" sizes, with either standard or "Floating-Hub" (shock-absorbing sprung wheel) construction. Swivel or rigid type. Write us.

Bassick MAKING MORE KINDS OF CASTERS
... MAKING CASTERS DO MORE

THE BASSICK COMPANY, Bridgeport 2, Connecticut
Division of Stewart-Warner Corp., Chicago, Illinois
Canadian Factory, Stewart-Warner-Alumite Sales Ltd., Belleville, Ontario

For Profitable FREIGHT HANDLING



FARQUHAR PORTABLE CONVEYORS

Freight handled by Farquhar Freight Type Portable Conveyors goes faster... with less manhandling time and expense. In warehouse, on the shipping platform, these conveyors handle bags, boxes, cartons, crates, cases, hampers, bundles, etc., weighing up to 500 lbs. each. Five types of mounting afford quick application to a large number of situations. Write Farquhar for Bulletin No. 391 (Featherweight) and Bulletin No. 432 (Heavy Duty Freight Conveyor).

Farquhar

Portable Machinery Division

A. B. FARQUHAR COMPANY

203 Duke Street York, Pennsylvania



HAISS

CARGO CONVEYORS

FOR LIGHT
MEDIUM AND
HEAVY DUTY

**20 TO 35 FT. LENGTH
BALL BEARING ROLLERS
ELECTRIC OR GASOLINE MOTOR DRIVE**



Write for data and prices, naming size and service conditions.

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Canal Place and E. 144th St., New York 51, N. Y.

Builders of High Grade Materials Handling Equipment for Over 50 Years

CUT COST • INCREASE SPEED!

FILCO

EASY-RIDE CONVEYORS



This modern gravity conveyor carries cases or cartons to any department speedily and efficiently! Sturdily constructed reversible curves, straight sections. Permanent or portable; with or without adjustable supports. Our engineers can solve your problems—write us your requirements and ask for illustrated folders.

Immediate Delivery of Standard Units

The FILTER PAPER Co.

58 E 24th St. Equipment Division Chicago

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Pressure Spray Gun

DeVilbiss Co., Toledo, O., has announced a new pressure feed spray gun especially designed for industrial degreasing and cleaning operations on castings, forgings, sheet metal, etc. Operated from a pressure feed tank, it handles all kinds of commercial solvents and cleaners, producing a heavy, driving, but well atomized spray that speedily removes dirt and grease.

Light in weight and shaped to fit the hand comfortably, this new gun has a two-finger, easy-to-pull trigger designed to reduce hand fatigue.

When trigger is pulled only part way back, air alone is emitted from the nozzle, permitting the gun to be used for dusting and drying.

Don't assume you can't get equipment—Inquire.

FIGURE A LINK-BELT SPEEDER CARGOCRANE

INTO YOUR PLANS FOR MORE
ECONOMICAL AND EFFICIENT
MATERIALS HANDLING

This compact, rugged and highly mobile unit lifts ten tons, gets into and out of close quarters easily and quickly, swings its load in a full circle. You'll NEED one of these, for sure!
Write for folder 2033.

5060

LINK-BELT SPEEDER

Builders of the Most Complete Line of
SHOVELS-CRANES-DAGLINES
LINK-BELT SPEEDER CORPORATION, 101 W. PERSHING ROAD, CHICAGO 9, ILL.
A DIVISION OF LINK-BELT COMPANY

GET A
POWERFUL
LIFT
WITH A
LINK-BELT SPEEDER

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THIS VETERAN CAN HANDLE YOUR JOB

Now and in post-war years this veteran of war fronts and industry can handle your particular conveying jobs with ease. Miles of Rapid-Wheel Portable Conveyors are now in use in all theatres of war where speed of handling is measured in lives saved. On the home front where the war must be won with Food, this veteran is also doing valiant service in all branches of the food industry. Users find the various units of Rapid-Wheel Portable Gravity Conveyors meet every conceivable need. Get this veteran on the job. Solve your labor shortage problem. Cut your handling costs. Write for further information.

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in Principal
Cities

THE RAPIDS-STANDARD CO., INC.

390 Peoples Nat'l Bank Bldg. Grand Rapids 2, Michigan



—THE NAME *that*
CARRIES WEIGHT

Veteran Expeditors!

Tractor Cranes—Trailer Trucks,
Stacking Elevators. Fork Lift Trucks
Hoisting Units, etc. for Warehouses, Airport
Pier and Yard Service. Literature on Request.

MERCER-ROBINSON COMPANY, INC.
30 CHURCH STREET, NEW YORK 7, N. Y.

REVOLVATOR HYDRAULIC ELEVATORS

Made with the same engineering precision that has made REVOLVATOR PORTABLE ELEVATORS so dependable and long lived. Easy and economical to install in old buildings. For lifts up to 30 feet, floor to floor, as ramp eliminators and press feeders for paper, plywood, or metal sheets, REVOLVATOR HYDRAULIC ELEVATORS

are saving time and manpower in factories, laundries, printing plants, and warehouses. Also may be adapted for the home. Bulletin 96-J includes data sheet for your specifications. Bulletins are available on REVOLVATOR PORTABLE ELEVATORS and RED GIANT LIFTRUCKS.

A typical warehouse installation. In taking this photo safety interlock was short circuited to allow platform to be raised and show ram with gate open.



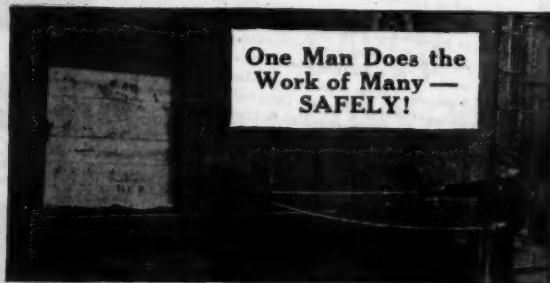
REVOLVATOR Co.

DESIGNERS AND MANUFACTURERS OF MATERIAL HANDLING EQUIPMENT

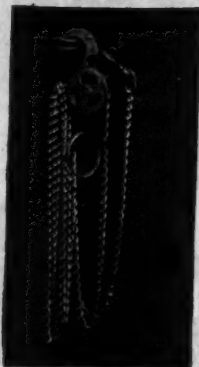
396 26th St. NORTH BERGEN, N. J. Since 1904

Protect Precious Manpower with

MONARCH ONE MAN CAR DOOR OPENERS!



**One Man Does the
Work of Many —
SAFELY!**



**No strained muscles
No slips or falls
No broken arms, legs
or mashed fingers
No fatalities
No time wasted
No "gangs" needed
No time lost**

One man can open the most binding, balky box car door with the Monarch Car Door Opener. Get greater safety . . . speed loading and unloading schedules . . . order an ample supply to fill your needs today!

PRIORITY NEEDED

**\$17⁵⁰
EACH**

MINING SAFETY DEVICE CO.

Dept. DW, Bowerston, Ohio

New Clark Products

Clark Equipment Co., Dewey Ave., Buchanan, Mich., has announced two new products for postwar promotion. The Clark easy roll trailer axle and the Clark booster unit for 1½-ton trucks.

Easy roll trailer axle design provides separate wheels for dual tires, each wheel rotating independently of the other, and its own simple braking mechanism. Outer wheel is served by inner brake, and they are connected by an axle shaft through a heat treated hollow spindle on which the inner wheel is mounted. Inner wheel and brake drum are integral.

This design, with its independently rotating wheels, provides a rectangular box construction of the load carrying member having considerable additional strength.

In weight, Clark easy roll trailer axle compares about pound for pound with other types of axles of the same capacity.

Chief advantage is complete elimination of tire scuffing on curves and rough road surfaces, estimated as high as 19 in. on a normal turn, and up to 150 ft. per mile on the highway due to curves and surface irregularities.

Clark booster unit provides a reserve of power available when needed. It is mounted inside the vehicle frame just back of the cab, a compact unit that does not affect loading space. Cut in and cut out may be operated as desired. Power input is through the transmission.

Its function is to provide high-gear operation under conditions which normally require dropping back to low gear.

According to performance data assembled by Clark, a conventional 1½-ton tractor hauling a fully loaded trailer can handle severest grades with a minimum of gear shifting or none at all, thus having all the advantage of high gear operation.

Guaranteed benefits, according to Clark, are higher average vehicle speed with vital savings of fuel and oil.

Don't assume you can't get equipment—Inquire.

Phelan's MATERIALS FOR OVERSEAS PACKAGING AND PROCESSING

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for Overseas Shipments

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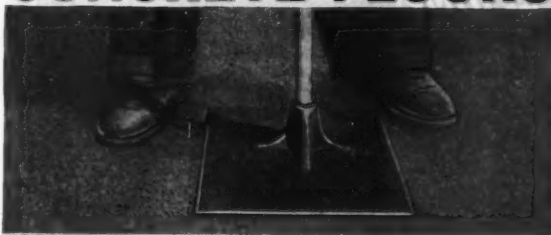
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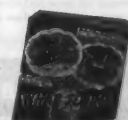
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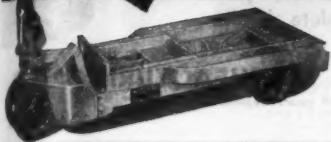
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A3 MIDGET
VICTORY MODEL

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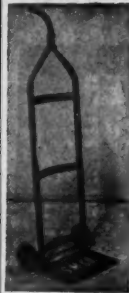
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Light—Durable
Quiet Running

Furnished with either
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Vitafilem

"Vitafilem," new lightweight, waterproof packaging and fabricating material which also can be woven into fabrics, has been announced by Goodyear Tire & Rubber Co., Akron, O.

A. F. Landefeld, manager, Goodyear's pliofilm department, described "vitafilem" as a derivative of polyvinyl chloride, offers "amazing current and post-war possibilities."

In six gauges of sheet form in which "vitafilem" is being produced by Goodyear, it is adapted for food bags, bowl covers, garment bags and other household purposes.

Heat sealed or stitched, "vitafilem" also is suitable for umbrellas, raincoats and similar products.

For woven fabrics, it is cut into thin strips which are stretched and twisted into thread for the looms, after which it is woven like any other fabric material such as cotton or rayon.

"Spun-On" Gasket

Production of the patented leak-proof "spun-on" copper gasket seal used on Edison spark plugs was resumed recently for commercial purposes by the Edison-Splitdorf Corp., subsidiary of Thomas A. Edison, Inc., West Orange, N. J., according to an announcement by A. J. Clark, vice president and general manager.

This gasket, which was eliminated because of copper scarcity at the start of the war, now is being attached to all 18 mm. spark plugs. It will gradually be replaced on other sizes and it is believed that within a short time will be used on all Edison spark plugs.

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AN AMAZING
LABOR SAVER!
Up to 800 lb.
drum or barrel
loads are auto-
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up by trucker.
No manual lifting.
No weight to
carry. Roller bear-
ings insure easy
travel.

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One-Man
TRUCK
WITH EXCLUSIVE
THIRD-WHEEL
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Type L-3

THIRD
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provides
foot pedal
for easy
break-over,
better load
support and
balance.

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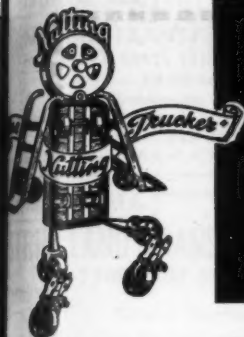
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With semi-steel roller bearing wheels

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Send Trial Order

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The Nutting Trucker Says:

"I'll see that you get just the kind of trucks you need for your job—and you'll call it your lucky day when you see how these easy rolling NUTTINGS get the work out." Look in your classified phone directory for your local Nutting representative. If not listed, write to us for Bulletin 41-G.

Fig. 138
Dolly



A heavy hardwood frame dolly for boxes, crates, etc. Double ball race swivel casters with metal or rubber tired wheels. Nutting makes all types of wood or steel dollies with capacities up to 4000 lbs.



Fig. 419 Jack
Fig. 421 Live Skid

Provides low-cost storage for merchandise that must be quickly moved at any time. Many advantages—compare before you buy.

NUTTING TRUCK & CASTER CO.
1165 DIVISION STREET, WEST, FARIBAULT, MINNESOTA



FLOOR TRUCK LEADERSHIP SINCE 1891

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4 WHEEL TRUCKS



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RUBBER WHEELS

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- Prevent floor damage
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- Strong wheel casting
- Hyatt bearing—grease fittings
- Soft, quiet resilient tread



NOW! These quiet floor-saving tires are available in 44 sizes, with or without the protective hub cap shown in illustration. Replace noisy floor-ruining wheels with Thomas VR tires.

Write for Catalog No. 43

THOMAS TRUCK & CASTER CO.

2100 MISSISSIPPI RIVER, KEOKUK, IOWA

D and W, March, 1945—75

TO COMPANY PRESIDENTS:-----



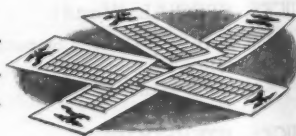
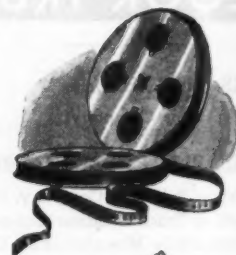
Today—thanks largely to you and other industrial executives—22,000,000 civilian workers are speeding victory and achieving postwar security through the Payroll Savings Plan. Over 60% of the 6th War Loan subscriptions came from this source—and, between drives, this forward-looking plan has been responsible for 3 out of 4 War Bond sales!

Good as this record is, the Payroll Savings Plan can be still more effective. Believing this can best be accomplished by giving Bond buyers a definite idea of the many benefits accruing to them, the War Finance Division has prepared a variety of active aids for employee education.

This new “ammunition” includes:

- a—An entertaining, swift-paced moving picture, graphically showing the importance of buying—and holding—War Bonds.
- b—An interesting, easy-to-read booklet, explaining how War Bonds may be accumulated to provide education for children, homes, retirement incomes, etc.
- c—Attractive, handy War Bond envelopes, enabling Bond holders to note each separate purchase—and the specific purpose for which each Bond or group of Bonds was bought.

Passing this particular ammunition requires that you reappraise your own company's Payroll Savings Plan. Have your own War Bond Chairman contact the local War Finance Committee—today! They will welcome the chance to discuss this new program with you.



The Treasury Department acknowledges with appreciation the publication of this message

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Pool Cars Handled

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9 So. Commerce Mobile 3

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Private Railroad Siding - - Quick Service.Represented by
NEW YORK ALLIED DISTRIBUTION INC. CHICAGO
11 WEST 42ND ST. PHIL. 4-0960 1525 NORTHERN AVE. MINNAPOLIS

Proposed Legislation Is Declared a Threat To Public Warehouse Operations

Proposed amendments to the Railroad Retirement Act and the Railroad Unemployment Insurance Act might include all public warehouse operations, Charles E. Nichols, secretary, merchandise division, American Warehousemen's Assn., states in spot news bulletin to AWA members.

DECLARING that all public warehouse operations might be adversely affected by proposed legislation now pending in Congress, Charles E. Nichols, secretary, merchandise division, American Warehousemen's Assn., in a spot news bulletin to members of the association, dated Feb. 9, urges all public warehousemen to take appropriate action to defeat passage of the proposed bills.

Mr. Nichols statement issued in Washington, D. C., follows:

"Because of the broad scope of proposed legislation recently introduced in Congress (Senate Bill S. 293 and House Bill H.R. 1362), AWA's General President, J. W. Howell, has appointed a Special Committee to deal

with this subject. The Committee consists of the Presidents and Vice-Presidents of the two Divisions, namely: F. A. O'Hara, chairman; P. W. Frenzel, G. D. Allman, and J. Leo Cooke.

"The Committee met in Washington, Feb. 5, E. V. Sullivan acting for Mr. Frenzel, who could not attend.

"If enacted, this legislation might be used to transfer a large majority of the cold storage and merchandise warehouse companies, and their employees, from coverage by the Social Security Act to coverage by the Railroad Retirement Act, with a resulting large increase of federal taxes to be imposed on the warehouse companies and their employees.

"The fact that freight is transported to or from these public warehouses by railroad companies would be the only ground for proposing to transfer the warehouse companies from the Social Security Act, where they belong, to the Railroad Retirement Act, which was designed and enacted solely for the benefit of the employees of railroad and railroad express companies.

"These bills may be deemed to propose an enlargement or expansion of the jurisdictional provisions of Sec. 1 of the Railroad Retirement Act so that warehouse companies would be employers within the meaning and application of Sec. 1 of that act. In that case, the proposed amendments

also would make all officers and employees of the warehouse companies "employees" within the meaning of that act, whether they do or do not perform any railroad or transportation duties.

"Such enlargement of jurisdiction might appear to be evinced in Sec. 1 of each of the bills, which, in part, read as follows:

"(3) Any person, other than a carrier regulated under part I of the Interstate Commerce Act, which, pursuant to arrangements with a carrier or otherwise, performs, for hire, with respect to passengers or property transported, being transported, or to be transported by a carrier, any service included within the term 'transportation' as defined in section 1 (3) of the Interstate Commerce Act, whether or not such service is offered under railroad tariffs;

"The pertinent provisions of Sec. 1 (3) of the Interstate Commerce Act, which are referred to in the above-quoted provisions of Sec. 1 of the bills, read as follows:

"The term 'transportation' . . . shall include . . . all services in connection with the receipt, delivery, elevation, and transfer in transit, ventilation, refrigeration or icing, storage and handling of property transported.

"It is noticeable that the terms 'warehouse' and 'warehouse company' do not appear in Sec. 1 of the bills. Nevertheless, that section, if enacted, may effect the transfer of practically all warehouse companies to the Railroad Retirement Act.

"Each of the several services falling within the meaning of the term 'transportation' are ordinary trans-

portation services performed by the railroads every day. But every retail coal dealer, warehouse company, and retail grocer also perform one or more of those services daily as a part of its ordinary and normal private business activities.

"The definition of 'transportation' as included in the Interstate Commerce Act is confined by the various sections of that statute to services performed by carriers on goods in their possession while in the channels of transportation. But the writers of the bills that are before us have seemingly not accepted that confinement; these bills might be construed to apply to non-carriers and to services performed preceding or succeeding the transportation of goods by railroad and, therefore, these bills may reach far out into the field of private business activities to embrace the warehouse industry.

"Other sections of these bills are troublesome. Sec. 1 (3) thereof, which has application to freight forwarders, might bring many warehouse companies within the scope of Sec. 1 of the Railroad Retirement Act, as employers, even if they escape the application of the other sections of this bill. Sec. 1 (4) and (5) are menacing, but they are so complex that we will refrain from a discussion of these sub-paragraphs here.

"The Railroad Retirement Act, in conjunction with the Unemployment Insurance Act and the Carriers Taxing Act, sets up two forms of taxation: one to provide annuities payable

to retired employees and the other to provide employees with insurance benefits during periods of unemployment.

"Taking up the taxation for retirement annuities (which is referred to as 'contributions' in these statutes), the transfer of warehouse companies to the Railroad Retirement Act, if accomplished, will subject your company to large increases in the taxes it pays as an employer and will correspondingly increase the taxes which it must deduct from the salaries and wages of its employees. Percentage on the payrolls of employers and on salaries and wages of employees are:

Controlling Act	Employer	Employee
Social Security Act...	1%	1%
Railroad Retirement Act	3 3/4 %	2 1/4 %
H. R. 1362 and S. 293.	5 1/4 %	5 1/4 %

"It is impractical to attempt to compare the taxation in unemployment insurance under the Railroad Unemployment Insurance Act with the taxation for similar benefits under the Social Security Act because contributions and benefits under the latter vary in nearly every state.

"It is to be noted that these bills have not been sponsored by the public, by any warehouse company, by any customers of warehouse companies, or by any employees of warehouse companies other than what can be inferred from the testimony of David B. Robertson, chairman of a committee of the Railway Labor Executive Assn., relative to employees in

LITTLE ROCK, ARK.

Arkansas' Largest Warehouse
Merchandise—Household Storage



Absolutely
Fireproof
Low
Insurance
Rates
Pool Car
Distribution
Compartments
for household
Goods

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IN PRINCIPAL CALIFORNIA CITIES
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FIRST . . . Established 1893 . . . MORE THAN ORDINARY
SERVICE . . . We invite inquiries relative to your warehouse problems.

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Established 1924

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COMPLETE FACILITIES EFFICIENT SERVICE
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Free and U. S. Customs bonded storage. The largest, most complete
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Daily motor truck service to all parts of the city and Los Angeles
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Free switch.: A.T.&S.F., S.P., U.P. and P.E. Ample Motor Truck
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Operating in San Francisco, Oakland, Stockton and Sacramento

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SERVICE**



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Draymen

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CHAS. C. WAGNER, Pres.

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Sprinklered thruout, Free switching
Pool and stop over cars stored or distributed
Centrally located

KENNICOTT WAREHOUSES INC.

1700—16 Street

Denver 17, Colo.

some railroad-owned warehousing operations.

"No public hearing has been held on Bill S. 293 by the Senate Committee, but hearings on Bill H. R. 1362 by the House Committee on Interstate and Foreign Commerce on now under way. We have requested an opportunity to be heard before both committees in opposition to these bills.

"Your Special Committee handling this matter has retained John J. Hickey, of Washington, to represent the AWA in it and will welcome suggestions from members as to pertinent

facts and information that will assist in bringing this issue to a successful conclusion. At the request of the Special Committee, L. M. Nicolson is also cooperating with the association and with Judge Hickey in the handling of this problem.

"The Committee feels that every effort must be put forth by the public warehousing industry to prevent the passage of these or similar bills and urge that all members register effective protests with the members of Congress from their respective Districts."

capacity, though utterly unprepared, to win this war."

Mr. Hancock declared that more employment after the war depends on inducing more employers to expand their activities. The devices of government planning, he said, turn toward regimentation and state socialism, and the responsibility of government is to clear the way for people to provide jobs for themselves and for employers to employ others.

"Unless there is a material reduction in taxes there will not be the incentive to the creation of jobs," Mr. Hancock asserted. "We have the choice of high tax rates with a lower volume of business and employment or lower rates on a higher volume."

Scoring pressure groups, Mr. Hancock pointed out that granting an advantage to one segment or group becomes the basis for more demands by every other group from the government. (Herr).

Holds Reconversion Involves a Return To Way and Spirit of Free Enterprise

Reconversion involves not only a change-over to peacetime production, but reconversion to the American ideal of free enterprise, John M. Hancock, New York, partner, Lehman Bros., banking firm, declared in a talk at Los Angeles recently.

Free enterprise, the speaker declared, has been overshadowed and lost sight of in the exigencies of war.

Mr. Hancock, co-author of the Baruch-Hancock report on war and postwar adjustment policies, climaxed a reasoned plea for "... a plan made by each individual or each business within the framework of free oppor-

tunity, the creation of which should be the scope of government planning," with the statement that:

"During the war we have got away from the American idea of free enterprise, the competitive economy with equal opportunity to all with no favors by the government.

"The kind of conversion upon which I should like to see us center our attention is a reconversion to the belief in the American way of life, a competitive economy with equal opportunity to all, favors to none and coercion by none, the way under which America grew strong and had a ca-

New York Central Orders 25 Locos

Twenty-five of the most powerful coal-fired steam locomotives ever used by the road, substantially the same as the experimental 4-8-4 type known as the S-1, have been ordered by the New York Central Railroad.

The engines, which will have at least 6,000 horsepower each, are expected to be delivered this year, bringing New York Central's locomotives to 3,685 units.

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it DARK

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WE SERVE
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Modern, Fireproof Warehouses
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17-Car Sidings. Free Switching.
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BURCH WAREHOUSE AND TRANSFER CO., INC.

General Office and Warehouse
200 SO. SANTA FE AVENUE

Modern Sprinklered Fireproof Building—Freight Forwarding and Distribution—Household and Merchandise Storage
PACKING AND SHIPPING

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NEW YORK ALLIED DISTRIBUTION INC. CHICAGO
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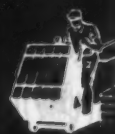
PUEBLO, COLO.

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WEICKER TRANSFER & STORAGE CO.

- Modern Sprinklered Building
- Pool Car Distribution
- Household and Merchandise Facilities
- Freight Forwarding and Distribution

★ AGENT ALLIED VAN LINES—



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The Bridgeport Storage Warehouse Co.

General Offices 10 Whiting St.

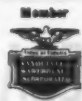
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Total Storage Area 67,000 Sq. Ft.

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N. Y., N. H. and H. R.R. Siding



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DEEP WATER TERMINAL AND STORAGE WAREHOUSES

INTERCOASTAL AND FOREIGN STEAMSHIP PIERS

STEVEDORE CONTRACTORS—GENERAL CARGO STORAGE

DIRECT AT STEAMER PIER

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For Shippers' Convenience, States, Cities and Firms are Arranged Alphabetically

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Established 1902



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DAVIS STORAGE COMPANY

335 East St., New Haven 2, Conn.
Modern Fireproof Merchandise Warehouse
Private seven-car siding, adjacent to Steamship and
R. R. Terminals. Pool and stop over cars distributed.
Merchandise Storage.
Motor Truck Service to all towns in Connecticut.
Low Insurance Rate. Prompt, Efficient Service.
Member of Connecticut Warehousemen's Assn.

NEW HAVEN, CONN.

PAUL A. DAHLGARD, Owner



West Haven Trucking Company Storage Warehouses

Offices, 435 Congress Ave., New Haven 11

Moving and Storage of Household
Goods Exclusively

Member Connecticut Warehousemen's Association

NEW HAVEN, CONN.

DAILY TRUCK DELIVERY SERVICE TO CONN. and SOUTHERN MASS.

from A.D.T. supervised buildings used
for storing merchandise, automobiles
and furniture. Low insurance rates.
15 car siding. Bonded with U. S.
Customs.



The SMEDLEY Co. Est. 1860
165 Brewery St., New Haven 11, Conn.

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Established 1860



The E. J. Kelley Co. Storage Warehouses

Main Office, Torrington, Conn.—Telephone 7243

One of New England's Largest Trans-
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Household Goods Packed, Stored, Shipped.

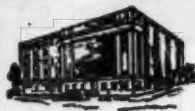
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Pool Cars Distributed in All Parts of Connecticut.

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Waterbury, Conn.; Springfield & Worcester, Mass.

WASHINGTON, D. C.

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E. K. MORRIS, President

(See Page Advertisement Directory Issue)
Member—NFWA, AVL, CanWA.

LEGAL NEWS...

By LEO T. PARKER
Legal Editor

Workmen's Compensation

In a majority of states the Workmen's Compensation Act provides compensation only for injuries resulting from accidents arising out of and in the course of the employment.

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This court held that if the employee was injured within the scope of his employment he could not sue the warehouseman for damages, because he

could get adequate settlement from the Industrial Commission.

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Obviously, however, if the employee may sue the warehouseman for damages he must prove that his injuries resulted from negligence of the warehouseman, otherwise he is not entitled to a recovery.

"Agricultural Laborers"

Modern higher courts consistently hold that employers of truly "agricultural laborers" who are exempt

from the National Labor Relations Act are exempt from many and numerous restrictive laws. However, such workers must confine their work strictly to plowing, planting, cultivating or harvesting, otherwise they are not exempt.

For example, in *Idaho Potato Growers, Inc., v. National Labor Relations Board*, 144 Fed. Rep. (2d) 295, it was shown that employees known as "warehouse crews" went to different farms and to warehouses to prepare potatoes for movement into market. The question presented the court was: Are these employees "agricultural laborers" exempt from the National Labor Relations Act? Also, if such employees are "agricultural laborers" they are not within the Fair Labor Standards Act, Social Security Taxation, and similar laws.

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This court explained further that this is so although the persons hired by the warehousemen engage in the operations of sorting and grading potatoes at the warehouse and away from the farms while the farmer still retains the title to the potatoes and may, indirectly, pay the price of the work.

Must Set Flares

In order to avoid liability for collisions with unlighted trucks parked on a highway the driver must set flares.

For illustration, in *Prout v. Mystic*

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Fast—Economical—Dependable

2. LOCAL CARTAGE

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Maurice Kreslin, Mgr.

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Household Goods storage, packing, shipping. Pool Car Distribution Merchandise.

Lift vans local delivery.

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Security Storage Company

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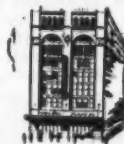
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EXCLUSIVELY FOR HOUSEHOLD GOODS & OFFICE EQUIPMENT

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Reinforced Concrete—Sprinkler System—A.D.T. Service
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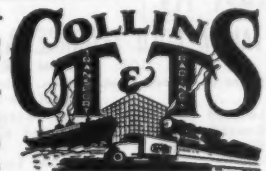
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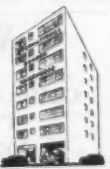
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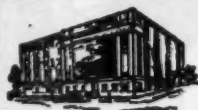
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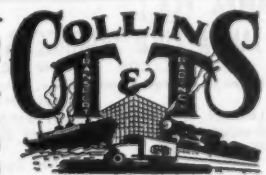
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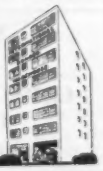
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Motor Transport Co., Inc., 58 N. E. (2d) 121, Mass., the occupant of a passenger automobile was injured when he came into collision with the rear of a large oil truck which was stopped without lights upon the highway.

The driver of the truck had plenty of time to set flares which he did not set. Therefore, the higher court held the truck owner liable.

On the other hand, see *Brooks v. Sente Trucking Co., 58 N. E. (2d) 234, O.*, where a tractor loaded with 6,400 lb. of steel was stopped on the highway and without lights. The night was misty and a Buick running 45 mph collided with the tractor killing the driver. In holding the trucking company not liable, the higher court said:

"Robinson (driver) was guilty of negligence which, if not the proximate cause of the collision, proximately contributed thereto."

Liable for Fire Loss

Generally speaking, the higher courts broadly construe insurance policies in favor of warehousemen.

For illustration, in *Arcadia Bonded Warehouse Co., Inc., v. Nation Union Fire Insurance Co., 19 So. (2d) 514, La.*, it was shown that a warehouse company held a fire insurance policy for \$5,000 covering the "use and occupancy" of a warehouse, which was destroyed by fire during the term of the policy. The time required to rebuild the warehouse was three months.

The warehouse company claimed that the loss of the use and occupancy of the building for the three months amounted to \$4,245.18. The insurance company made an offer of settlement. The warehouse company rejected the settlement offer and sued for \$4,245.18, plus \$359.42, being the statutory penalty of 12 per cent on the difference between the amount claimed and the amount tendered, and plus \$500 for the attorney's fee.

During the trial the testimony proved that three months which the warehouse company took to rebuild the warehouse was the time "required with the exercise of due diligence and dispatch," as stipulated in the policy, to rebuild the warehouse.

In holding the warehouse company entitled to a full recovery from the insurance company, the higher court said that the length of time required to rebuild the warehouse was the "measure of value of property" within a fire policy covering loss of profits and payment of overhead expenses.

Sudden Peril

While it is generally true that violation of a state statute is "negligence," this is not always the case. One important exception comes under the sudden peril rule. Where one is suddenly confronted with an emergency in which his own safety is imperiled, and when such a sudden emergency is created by the unlawful act of another, the failure to act in such a manner as would conserve his

own safety does not necessarily establish negligence or contributory negligence in law.

For instance, in *De Ponce v. System Freight Service, 152 Pac. (2d) 234, Cal.*, it was shown that two trucks were involved in an accident which happened about midnight. Two members of the Highway Patrol reached the scene of the accident shortly after it happened. In their testimony they plotted the course taken by the vehicles, as shown by its tire marks which showed that the tractor-trailer was on the left side of the highway at the time of the accident.

The higher court rendered its decision on the evidence presented by the Highway Patrol which proved that the driver of the tractor-trailer was not presented with a sudden peril which justified his being on the wrong side of the highway.

Therefore, the higher court held the owner of the tractor-trailer liable saying that the evidence did not prove that its driver had any legal reason to be on the wrong side of the highway.

Air Traffic Control

In *Allis, 15 N. W. (2d) 201*, it was shown that a state law controls air traffic.

The higher court held that the state law does not violate a constitutional provision which prohibits the state from controlling private affairs. The court held that control of air

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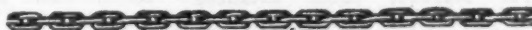
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Custom Is Important

Modern courts hold that a recog-
nized custom may be a legal substi-
tute for violation or breach of a valid
contract.

For illustration, in *Dixon v. Chase
National Bank of City of New York*,
144 Pac. (2d) 759, N. Y., it was
shown that a bank contracted to honor
two 90-day drafts if presented at its
office on or before a stipulated date
and accompanied by specified docu-
ments, including a "full set of bills of
lading" evidencing shipment of a
stated quantity and quality of cotton.

The seller duly shipped the cotton
to its customer in two lots, receiving
for each shipment two originals of
the bills of lading. Through the Guar-
anty Trust Co. of New York, the sel-
ler's drafts and documents were pre-
sented to the bank but only one of the
set of two bills of lading was deliv-
ered. In lieu of the other, which
was in the mail and not yet arrived
in New York, an indemnity agreement
or guaranty against loss resulting
from its absence was tendered by the
Guaranty Trust Co.

The bank refused to honor the
drafts on the ground that one full set
of the bills of lading was absent, con-
tending that failure of the seller to
present this set of bills of lading was
a breach of the contract.

The seller sued the bank and proved
that for some time there existed a

general and uniform custom among
New York banks, exporters and im-
porters to the effect that when a seller
fails to present a bill of lading the
bank issuing credits will accept, in
lieu of the missing bill of lading, a
guaranty of a leading and responsible
New York bank.

In view of this testimony the
higher court held the bank liable for
breach of contract. This court said:

"In our opinion the custom under con-
sideration explains the meaning of the
technical phrase 'full set of bills of lad-
ing' and is incorporated by implication
into the terms of the defendant's (Bank)
letters of credit. . . . It is well settled
that parties who contract on a subject-
matter concerning which known usages
prevail, incorporate such usages by im-
plication into their agreements, if nothing
is said to the contrary."

Fair Labor Standards

Considerable controversy has arisen
from time to time over the question:
Is an employer within the Fair Labor
Standards Act when he performs work
or services for the United States?
This question was answered in the af-
firmative by a recent higher court.

In *Umthun v. Day & Zimmermann,
Inc.*, 16 N. W. (2d) 258, Ia., reported
Dec., 1944, it was shown that an em-
ployee was employed as a foreman.
During many weeks he worked in ex-
cess of 40 hours per week for which
he received no overtime compensa-
tion. He was in charge of crews en-
gaged in processing merchandise
shipped to and from the plant, and
to and from other states. All of the

work was done for the government
and under government contracts. The
employee sued this employer for back
wages under the Fair Labor Stand-
ards Act.

In holding the employer not liable,
the lower court said that the Act is
not applicable to employees in govern-
ment work or to employees who work
on government contracts. The higher
court reversed this verdict, saying:

"There can be no question that plain-
tiff (employee) was engaged in the pro-
duction of goods. . . . It has been well
established that the Act, which is reme-
dial in character with a humanitarian
end in view, is to be liberally construed.
. . . Defendant concedes that Congress
would have made the Act applicable to
interstate transportation by the govern-
ment. . . ."

Office Building Employees

In *Convey*, 140 Fed. (2d) 640, it
was shown that a suit was filed
against the corporation owner of an
office building to compel it to pay back
wages, penalties, etc., to certain em-
ployees under the Fair Labor Stand-
ards Act. The employees were en-
gaged in the maintenance and
operation of an office building. They
were engineers, janitors, watchmen,
painters, and similar employees.

In holding these employees not
within scope of the Fair Labor Stand-
ards Act, the higher court said that
although the activities of employees
contributed to the convenience and
comfort of the occupants, it is clear
that they were exempt from the Fair
Labor Standards Act.

It is apparent therefore that the mere fact that the tenants of a building are engaged in interstate commerce does not necessarily mean that the building maintenance employees are likewise engaged in interstate commerce.

Labor Dispute

In *National Labor Relations Board v. Gluek Co.*, 144 Fed. (2d) 847, a labor disagreement arose between a brewery and a trucking company and the employees who delivered the brewery's products.

The National Labor Relations Board directed both the brewery and the trucking company to reinstate the truck drivers of the brewery to their former positions, or to substantially equivalent positions. This court held that where an employer favors one union over another, in a jurisdictional dispute, this act is "unfair labor practice" notwithstanding that the employer was motivated by his own economic interest, and that he had no desire to injure one union or to help the other.

Another important point of law decided by this court was that when a trucking company is jointly held with a customer for whom it hauls merchandise, for unfair labor practices, the trucking company is subject to the National Labor Relations Act regardless whether it is engaged in interstate commerce.

Illegal Note

An illegal note cannot be rendered valid by its assignment to an innocent party. Moreover, all valid and legal items associated with an illegal note transaction are automatically rendered void.

For example, in *Beverage Co. v. Villa Marie Co.*, 13 N. W. (2d) 670, S. D., it was shown that a seller accepted an illegal note in payment for merchandise. Also, a mortgage was executed. Later the note and mortgage were assigned and made payable to a man named Jarvis who gave no consideration, promise or money to the assignor. The court held that the note and mortgage were invalid.

In other words, where a person receives a note and mortgage for an illegal consideration, which was paid by another, the holder of the mortgage cannot sue and recover payment on the note.

After the court decided that the amount due on the note and mortgage could not be collected by the seller another question presented the court was whether the seller could collect for \$688 worth of legal merchandise sold legally to the assignor of the note.

It is interesting to observe that this higher court held that since this legal and valid debt was associated with the illegal note and mortgage transaction, the seller could not collect this otherwise valid account.

Trustee and Pledgor

The Statute of Frauds provides that a verbal agreement is invalid to sell for cash a "chase in action" having a value of more than \$500. This law is universal throughout the United States. However, the law also states that if a purchaser makes a "down" payment on a credit sale such contract need not be in writing.

The question often has been asked whether a pledgee who is given title to pledged property may make a valid verbal agreement to sell for cash the pledged personal property having a value over \$500.

In *MacDonald v. Pacific*, 152 Pac. (2d) 360, Cal., it was shown that a corporation owed a bank notes aggregating several thousand dollars. All of the notes except one for \$21,000, were secured by pledged warehouse receipts. Later the corporation became insolvent and a verbal agreement was made by which the bank could retain as a purchaser all of the pledged receipts, but the bank sold the \$21,000 note for \$8,640.

The important point of law presented the court was whether this verbal agreement was valid in view of the Statute of Frauds. The higher court held the contract valid because the loss sustained by the bank when it sold the unsecured note was a legal "down payment."



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Bailment Distinctions

Modern higher courts consistently hold that the basis of a "trust" relation is confidence in the trustee. And this same rule of law is applicable to a "bailment."

However, in a "bailment" the bailee does not take legal title to the subject of the bailment, but in a "trust" the trustee takes the legal title.

For example, in Knox County v.

Fourth, 182 S. W. (2d) 980, Tenn., it was shown that a bailee held certain personal property for safe keeping. The owner gave the bailee the privilege of trading this property for other property. Thus the bailee became a legal trustee.

The court held the bailee-trustee liable in damages to the bailor because he traded the valuable property for worthless property. The court held that a reasonably prudent trustee would not have made this error.

Act if it believes such action is justifiable. The court always has the option to hold the Act effective or non-effective, in a particular instance.

The law extends the right of creditors to add to overdue accounts 6 per cent interest annually. Therefore, the courts usually decide that this legal interest charge is sufficient to warrant reasonable protection of a person in military service from having his law suits decided or adjudicated while he is absent and cannot appear to defend same.

Of course, if the thing involved nets an income, the court will authorize payment of debts, from this income, to a proven creditor.

In another instance the court authorized sale of an automobile for \$700 when the soldier owed only \$100 on it. The soldier was given the \$600 difference. But in another case the court would not authorize a dealer to sell a machine which would sell for only \$600 when the soldier owed \$600 on it.

With respect to selling stored goods for overdue charges, such problem must be presented for the court's decision and determination. If there can be no benefit to the member in military service in not selling the goods, the court may authorize the warehouseman to sell the goods.

With respect to information desired regarding servicemen, you may write to the War Department in Washington, D. C., and obtain this required information.

LEGAL

Questions and Answers

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Civil Relief Act

Question: Again we come to you for your advice in relation to the laws of the State of New Jersey in the selling for storage charges the household goods and effects of those who might be in the service of our Government.

We know that it is easy to have accounts very much over due in which there is no way of knowing as to

whether the people are in the service of the Government or not.

Can you give us the benefit of your knowledge in this connection as to how we may go about it to find out whether these accounts are service accounts or not? L. S. W. Co.

Answer: There is little you can do to avoid the Soldiers' and Sailors' Civil Relief Act. Sometimes a court will agree to waive the effects of this

Intrastate Business

Question: We receive merchandise from outside the state and take it from the cars and repack it. This service is for our customers. Sometimes we repack in different packages and at other times we merely sort the merchandise. Then we store it and later ship it according to instructions received from our customers. The question is: Is this merchandise in interstate commerce? A. C. T.

Answer: A temporary stop does not take the goods from the original interstate transaction. But where goods are stopped for repacking this service is not a temporary stop.

See *Walling v. Jacksonville Paper Co.*, 63 S.C.R. 332. The Supreme Court of the United States held in this case that a "pause" or temporary stop of goods in a warehouse does not change the interstate commerce character of the transaction.

On the other hand, in *Higgins v. Carr*, 63 S.C.R. 337, the Supreme Court of the United States held that where merchandise shipped from outside the state is received into a warehouse where the goods remain until sold this company is not obligated to pay federal wages to its employees because the company is engaged in intrastate commerce transactions.

So, therefore, your transaction is intrastate business.

Night Watchmen

Question: The question has arisen whether our guards and night watchmen are interstate or intrastate employees. We do business and perform services for the U. S. Government. This question is important, as we understand it, because the answer will let us know what to do about the Federal Wage Law, and also whether to insure these employees under the local or Federal liability laws. The Atlas Co.

Answer: First, the fact that you do Government work does not exempt your employees from the Fair Labor Standards Act, or other federal laws, if they are "interstate" employees.

In *Couch v. Arkansas Cold Storage Co.*, 168 S. W. (2d) 822, it was shown that the night watchman, of the Arkansas Cold Storage Co.'s ice plant filed suit under the Fair Labor Standards Act for back wages, penalty, and attorney's fees.

While acting as the night engineer the employee operated the machinery, handled the compressor and assisted in loading trucks.

The higher court refused to hold the warehouse company liable, because less than 1.3 per cent of the total production of its plant was sold in interstate commerce.

In *Southern Corp. v. Walton*, 11 So. (2d) 912, a watchman performed no service other than making hourly round of the plant. The question presented the court was whether he

was engaged in "production of goods for commerce" or in the occupation "necessary to the production of goods for commerce" within the Fair Labor Standards Act.

Since the testimony disclosed that the plant did not operate at night and that when fires were kept under the boilers in the plant at night a regular and licensed fireman was kept on duty for that purpose, the higher court held the watchman not within the Fair Labor Standards Act.

However, other higher courts have held that if a night watchman is permitted to keep up fires, assist to load trucks or perform any other similar acts, in addition to his "watching" a plant used in production, handling or processing goods in interstate commerce, such watchman is an interstate employee.

For illustration, in *Doyle v. Johnson Bros.*, 28 N.Y.S. (2d) 452, it was shown that a guard's duties were to guard merchandise in interstate commerce. Also, this guard opened gates to permit passage of his employer's trucks, and he acted as fireman of a furnace needed to keep the plant properly heated.

The court held that this guard was "engaged in production of goods for interstate commerce" within the meaning of the Fair Labor Standards Act.

Limitation Clause

Question: Our bills of lading limits our liability to \$50 per package. When

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we were delivering a load, our truck took fire and burned all the goods. How can we take advantage of this \$50 limit clause? We are a common carrier. Woodburn Warehouse Co.

Answer: If your limitation clause gave the owner opportunity to pay increased freight rate and obtain full coverage, the clause is valid. Otherwise, it is void.

The only plan by which you may take advantage of this clause in making a settlement is to notify the owner, and if he is unwilling to make the settlement then he must sue and let the court decide the controversy.

Can't Contract

Question: When and under what set of conditions is a contract valid by which an employee agrees to waive his rights to collect from us the wages specified by the Fair Labor Standards Act? We have an old man who wants a job but we cannot afford to pay him these wages. M. P. T.

Answer: You cannot sign or make a valid contract of this nature with this man. The court will not recognize the contract.

If this man performs work connected with interstate commerce you must pay the wages specified by the Fair Labor Standards Act, or he can sue and recover back wages, penalties and lawyer's fees of \$500 or more, regardless of the fact that he agreed to waive his legal right under this Act.

Tariff Rate

Question: Not long ago through error we made a contract to transport a load of merchandise for \$325. The tariff we find is \$525. Are we liable in any way for making this contract? Patrick Warehouse Co.

Answer: Your only solution is compel, by suit if necessary, the shipper to pay the tariff rate. The contract for \$325 is void and has no legal effect. You can sue and recover \$525 irrespective of your contract agreeing to transport the goods for \$325.

Responsibility

Question: We had a manager who issued certain warehouse receipts and used them as collateral for his personal loans. Can it be that we are responsible to the holders of these receipts? A. C. T.

Answer: It is my opinion that you are liable for these acts of your manager, and all other acts within the scope of his employment, unless previously you either notified the holders of these receipts that you would not assume responsibility for acts, promises, and other representations of the manager; or you definitely and positively refused to comply with his assumed authority in past transactions with these receipt holders.

Of course, there are records of higher court decisions holding corporations not responsible for managers' contracts under circumstances of testimony that the by laws of the

corporation are clearly restrictive in this respect. However, such cases are rare.

Damaged Goods

Question: A few weeks ago we shipped merchandise to the buyer's order f.o.b. his city. These goods were damaged in transit. Who is responsible? Leslie Mfg. Co.

Answer: You, as consignor, must assume the responsibility of collecting the loss from the carrier and also you must supply the purchaser with other undamaged merchandise.

This is so because the consignor retains legal title to a shipment of merchandise shipped f.o.b. the location of the consignee. If the goods had been shipped f.o.b. your city, the consignee would have been obligated to pay you the full contract price for the merchandise, and to collect his damages from the carrier, because he would have had legal title from the instant the shipment was accepted by the carrier.

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Distribution Cost Reduction

(Continued from page 18)

of men, machines and space in getting out the day's work.

2. Mass Handling of Stocks

In these efforts to lower the costs associated with the physical processing of merchandise through the warehouse, the streamlined wholesale grocers have been quick to apply new machines and new methods as these have become available. Thus, there are a number of progressive houses that have been using fork trucks in order to secure a larger output per employee and a smaller cost per ton of output. Fork trucks and comparable equipment, such as tiering machines, used in the larger houses, make it possible for the wholesaler to use his cubage to much better advantage than ever before, permit him to high-tier the stored and active goods at low cost, and permit the unit load to be as large as the wholesaler desires.

These machines handle skids or pallets which the wholesaler loads at the receiving dock. He handles them as loads in all subsequent processes right up to the point at which the

goods are selected for inclusion in the retailers' orders. Until these materials handling machines became available the jobs of receiving, storing, tiering, assembly-line replenishment, order picking, etc. had to be laid out on the basis of what a man could handle with the aid of hand equipment such as jacks, "four-wheeler" order picking trucks, etc. While such devices multiplied the capacity of the man considerably, it was the custom to add manpower as the burden of the job increased. Thus, if the skid-load weighed more than a man could draw to the elevator, two men drew it.

The experiences of the Army and Navy are going to be available after the war as lessons for distributors, who will be thus enabled to avoid the mistakes they would otherwise find inevitable in seeking the best methods of using these mechanical aids. A publicity item released by the Navy Department states that while 100 manhours were needed to unload a car of 5-in. projectiles, piece by piece, only one and a half manhours were required for that job when palletized loads and a fork truck were used. Granted, of course, that the pallets

had to be loaded at the source, and that a share of the time so required might be a proper charge against the unloading operation, there is no reason why a piece-by-piece practice should be followed at every handling stage.

3. Simplification Necessary

The wholesalers look forward to the day when similar time economies will be available to them. They see that before there can be any widespread palletization at the source, there must be simplification so that the great number of skid and pallet sizes now in use will be reduced to a few sizes which will be exchangeable between handlers at the various stages of distribution. The National Bureau of Standards, of the Department of Commerce, is now undertaking a program to this end. It will involve careful consideration of the situations that obtain weightwise and dimensionally in handling, storing and shipping as goods move down the channel of distribution to the consumer.

4. Assembly Line Principle

Assembly lines are a product of the reasoning that it is cheaper to do the order picking from a part of the inventory than it is to have the order picker circulate through the entire stock to select the goods wanted. The nature of present-day assembly lines

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in the wholesale grocery trade is such that the order picker travels the least distance possible and adds the bulk of the tonnage to the order in the last aisle of the assembly line. The aim of the assembly-line designer is to decrease steadily the ton-mileage of order picking while increasing the tonnage of order output.

To these ends new notions have been introduced experimentally. One of these is a means of placing the entire carlot-stock of an item on the assembly line without affording the goods more than a pallet-face width of assembly-line space. The scheme involves triple-tiering of the pallets in lengths of a roller conveyor, the pallets being loaded into the rear of the car aisle by fork truck from the receiving dock and "crumbled" in order picking at the assembly line end. Thus the wholesaler achieves the ideal advantage of a short line and a single inventory while avoiding the need for replenishing the line from a reserve stock held elsewhere in the warehouse.

Integration

In the last analysis, a reduction of the costs of distribution may well require the cooperation of all stages of distribution. The wholesaler looks backward to the manufacturer in the hope that eventually he will be able

to secure pallets loaded at the source. Thus working together they can eliminate the extra handlings of merchandise that now occur, the cost of which must be passed on to the consumer.

At the other end of the line wholesalers and retailers have been finding ways of integrating their operations in such a way as to avoid the competition and conflict that occur when the retailer is a buyer and the wholesaler a seller. They find that the wholesaler can do a better and cheaper job of supply when he concentrates on his job of buying and handling, and that the retailer can do a better job of distribution when he concentrates on his job of selling and leaves the job of supply to the wholesaler. Thus have come the voluntary groups and the retailer-owned wholesale houses, in answer to the chain-store form of vertical integration.

But just as it is hard to separate the wholesale costs of the chain store, it becomes ever more difficult to separate the costs of wholesaling by those independents and cooperatives who find it wise to take on retailer functions for the good of the wholesaler-retailer integration. Thus census figures show that the voluntary group wholesalers operate at costs higher than those of the non-integrated grocery wholesalers. A mere glance at their methods demonstrates that the

former, however, are performing many so-called retailer functions.

What Can be Done?

The war program has largely been one of production. The postwar challenge will be one of distribution. At the current rate federal war and non-war expenditures are running at an annual rate of approximately \$100 billion. When the firing ceases and as our military establishment is reduced to a peace-time basis, federal expenditures will probably be reduced to an annual rate of approximately \$25 billion. This will represent the largest most abrupt disappearance of markets in history. To provide a high level of production with full employment, we must find markets for goods to fill this gap.

One of the greatest needs in post-war distribution is more scientific study of our distributive processes. To meet this need we shall need many more trained distribution specialists and more awareness on the part of top management of the need for overall distribution research and the methods by which it should be done.

We shall need distribution research in order that we may bring to the market new products which will fill new wants and better products to fill old ones. We shall need distribution research to discover and put into use

the most efficient selling techniques to insure maximum sales. Postwar America cannot afford to miss a sale. And we shall need distribution research to reduce costs, thereby lowering prices to broaden markets. Each job handled throughout the distributive process should be subjected to the closest scrutiny and the more efficient ways of doing the job should be adopted.

Scientific Approach

As a nation we have spent fabulous sums in the improvement of products and in the development of more efficient production methods. By contrast we have spent only paltry sums on distribution research. This was only natural as the economy was developing its mass production techniques. But the big job before us now lies not so much in production as in distribution, in the development and exploitation of markets. Top management in the past has been largely production conscious. The top management job of the future is to solve the problems of distribution. With a growing awareness of the job, we may be sure that the same scientific approach to the problem will yield results comparable to those which scientific methods have yielded in production.

As we enter the distribution period there will be a great need for trained

distribution specialists who have the scientific over-all approach. The present stock is woefully inadequate. There are approximately 3,000,000 manufacturing, wholesaling, and retailing concerns in the country. Only a very few of these concerns now have any force of distribution research personnel. To be sure many of these concerns are very small and will have to get their new distribution ideas by copying their big brothers. But there must be 75,000 to 100,000 of the larger concerns that have the resources and they will certainly have distribution problems. They should make the widest use of distribution research in their solution.

There are no comprehensive figures on the number of practicing distribution specialists in the country. But some light on the "saturation" of this potential market may be supplied indirectly from a number of sources. The excellent profession society in the field, the American Marketing Assn., had only 1288 members at the most recent count. Of these, only 763, or 63.3 per cent, are engaged in commercial marketing research, the remainder being in teaching, government and other activities. And of the 763 persons in marketing research only 230 are employed by manufacturers, and they are employed by only 168 companies. There are 36 in mail order, department stores, chains, etc.,

46 in associations, 128 in advertising agencies, 123 in advertising media, 125 in consulting work, 54 in government and 21 in utilities, financial companies, etc.

Qualified Research

Unquestionably there are a fair number of other qualified persons who are engaged in marketing research but are not in this association, but these figures supply some idea of the relative size of the distribution research force. In contrast the National Research Council reports that in 1940 there were 70,000 research workers in 3480 American industrial laboratories.

Our colleges and universities to which we look for our supply of leadership material have a big task cut out for them. We have colleges of agriculture, colleges of engineering and extensive curricula for training chemists and physicists but our training facilities for distribution specialists are only in the early developmental stages. Our colleges of commerce and schools of business administration have a few courses in marketing, sales management, business statistics, etc., but by and large their graduates have only general business training. We need more adequate facilities for the training of distribution specialists. The plans should be laid now so that the trained special-

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11 WEST 42ND ST. RENN 6-0586 1517 NEWBERRY AVE. MON 151

DES MOINES, IOWA

BLUE LINE STORAGE CO.

200-226 - Elm - Des Moines 9, Ia.

Merchandise and Household Goods
Storage

Private Siding—Free switch from
any R.R. entering Des Moines

Members: AWA—NFWA—IAWA—M.O.W.A.



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Member American Chain of Warehouses

Fire
Proof
Ware-
house

MERCHANTS
TRANSFER & STORAGE CO.

9th
&
Mulberry
Des Moines 4

TRY OUR SUPERIOR SERVICE
51 years' warehousing nationally known accounts
gives you Guaranteed Service
Daily reports of shipments and attention to
every detail

DUBUQUE, IOWA

COMPLETE DISTRIBUTION SERVICES

222,000 sq. ft. of floor space in buildings of brick-concrete-
steel construction. Chicago-Great Western R.R. siding with
10 car capacity. Free switching with Federal Barge Lines.
Low insurance rates. Complete-Motor-Freight-Facilities.
Pool car distribution—all kinds. Merchandise & House-
hold Goods Storage, industrial and office space for rent.

Write today

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3000 JACKSON ST. DUBUQUE, IOWA

Member of Iowa Warehouse Ass'n.

Chicago Representative: National Warehousing Service, 519 W. Roosevelt
Rd. (7) — Tel. Canal 5742



Member NATIONAL FURNITURE WAREHOUSEMEN'S ASSN.
Agent ALLIED VAN LINES, INC.

MASON CITY, IOWA

CADWELL STORAGE & MOVING CO.

Private siding CM&StP with full switching reciprocity—
CRU—CGW—M&StL—CNW.
100,000 sq. ft. Dry Storage Space.
SPECIALIZE IN POOL CAR DISTRIBUTION with
LOCAL CARTAGE FACILITIES. Member I.W.A.

MASON CITY, IOWA

A. W. A.—May. W. A.

MASON CITY WAREHOUSE CORPORATION



Merchandise Storage,
Household Goods Storage,
Pool Car Distribution,
Local and Long Distance
Moving.

Packing & Crating,
Local Transfer,
Private Sidings,
Motor Freight Terminal.



WATERLOO, IOWA

IOWA WAREHOUSE CO.



Fireproof Warehouse Motor Truck Service

Distributing and Warehousing All
Classes of Merchandise and House-
hold Goods



KANSAS CITY, KANSAS

**INTER-STATE
MOVING AND STORAGE COMPANY
FIREPROOF WAREHOUSE
18th & MINNESOTA, KANSAS CITY 2**



Packing, Moving, Storing and Shipping. Private Siding
Agent for Allied Van Lines, Inc.
L. J. CANFIELD, Proprietor Telephone Br. 3450

PARSONS, KANSAS

Member of A.W.A.

**PARSONS COLD STORAGE COMPANY
2021 GABRIEL AVE.**

COLD STORAGE AND MERCHANDISE WAREHOUSING
POOL CAR AND SPOT STOCK DISTRIBUTION
QUICK SERVICE AND REASONABLE RATES

10 car siding on MK&T—Free switching. Pick up and delivery service
for 2 Motor Freight Lines operating out of our terminal.

TOPEKA, KANSAS

Agent for Allied Van Lines, Inc.

TOPEKA TRANSFER and STORAGE Co., Inc.

A.W.A. Established 1880 M.F.W.A.
FIREPROOF WAREHOUSES FOR MERCHANDISE & HOUSEHOLD GOODS
TWICE DAILY TRUCK SERVICE TOPEKA-KANSAS CITY
CITY-WIDE DELIVERY SERVICE
Private Switch Connections AT & SF, C&I & P. U.P. and M.P.

WICHITA, KANSAS

**A Modern Distribution and
Warehousing Service
Brokers Office & Warehouse Co.**

149 North Rock Island Ave., Wichita 2
B. W. BILLINGSLEY, JR., Manager
Member of American Chain of Warehouses

WICHITA, KANSAS

Write or Wire



**Cassell
TRANSFER & STORAGE CO.**

125 No. Rock Island Ave., Wichita 2
Fireproof Storage and Sprinkler System

WICHITA, KANSAS

Chas. Knorr, Mgr.

MID-CONTINENT WAREHOUSE COMPANY

BONDED

619 East William St., Wichita 2.
MERCHANDISE STORAGE DISTRIBUTION
A SUPERIOR SERVICE REASONABLY
AND INTELLIGENTLY RENDERED

WICHITA, KANS.

UNITED WAREHOUSE CO.
Merchandise Warehouses
at
TWO BIG
MARKETS
WICHITA, KANSAS ← → KANSAS CITY, MO.

LOUISVILLE, KY.

Louisville Public Warehouse Company

131 EAST MAIN ST., LOUISVILLE 2

25 WAREHOUSES 944,000 SQUARE FEET

Louisville Member

AMERICAN CHAIN—DISTRIBUTION SERVICE, INC.
Gen'l Mds. H. H. Goods

NEW ORLEANS, LA.

E. B. FONTAINE, Pres. & Mgr.

**Commercial Terminal
Warehouse Company
INCORPORATED**

Modern Merchandise Warehouses

A dependable agency for the
distribution of merchandise
and manufactured products.



Storage Cartage Forwarding
Distributing Bean Cleaning
and Grading Fumigating

Office 402 No. Peters Street
NEW ORLEANS 16 LOUISIANA

NEW ORLEANS, LA.

**Douglas Shipside Storage Corporation
Douglas Public Service Corporation**

Represented by
Distribution
Service, Inc.
New York Chicago
San Francisco



New Orleans 1, La.

Sprinklered storage —
1,050,000 square feet.
Water and Furniture.
Switch track capacity —
100 cars.
Nine warehouses, conven-
ient to your trade.
Loans made against nego-
tiable receipts.
Trucking Department op-
erating 105 trucks.
Insurance Rates 12¢ to
15¢.



NEW ORLEANS, LA.

Member of A.W.A.

Independent Warehouse Co., Inc.

2400 CHARTRES ST., New Orleans 17
Specializing in MDSE Distribution
Operating Under Federal License


All concrete Warehouses, sprinklered, low insurance rates. Low handling
costs. Located on Mississippi River—shipside connection. Switching
connections with all rail lines. State Bonded. Inquiries Solicited.



NEW ORLEANS, LA.

New Orleans Merchandise Warehouse's Ass'n.

MALONEY TRUCKING & STORAGE, Inc.

133 NORTH FRONT ST., NEW ORLEANS 1
An Able servant to the PORT OF NEW ORLEANS
Complete warehousing facilities—Distribution—Weighing—Forwarding—Fueling—
Storage—Cartage—Field Warehousing—Office—Scales—Display Room—
UNITED STATES AND STATE BONDED
Represented by 
NEW YORK BALDWIN DISTRIBUTION INC CHICAGO
11 WEST 47TH ST. NEW YORK 18, N.Y. 175 N. WABASH AVE., CHICAGO 5

NEW ORLEANS, LA.

T. E. GANNETT, Owner



Standard Warehouse Company

103 Poydras St., New Orleans 8, La.

Complete Warehousing Service

SHREVEPORT, LA.

The Distribution Center
of ARK.—LA.—TEX.

**SPECIALIZING IN
MERCHANDISE STORAGE and POOL CAR DISTRIBUTION**

Modern fireproof facilities with sprinkler system . . . Private siding . . . Watchman
service . . . Low insurance rates . . . Truck connections with all motor freight lines . . .
Courteous, efficient service for thirty-two years . . . IF you want your customers to
get the best in Distribution Services HAVE HERRIN HANDLE!!

HERRIN TRANSFER and WAREHOUSE CO., INC.
MARSHALL AT DAVIS STREET, SHREVEPORT 24
Household Goods Storage and Transfer, Trucking Delivery Service.

BANGOR, MAINE

McLAUGHLIN WAREHOUSE CO.

Established 1875

Incorporated 1918

General Storage and Distributing

Rail and Water Connection—Private Siding

Member of A.C.W.—A.W.A.—N.F.W.A.—Agent A.V.L.

BALTIMORE, MD.

For Details See Directory Issue
Distribution and Warehousing

BALTIMORE FIDELITY WAREHOUSE CO.

Hillen & High Sts., Baltimore 2

T. E. WITTERS, President

Baltimore's Most Modern Merchandise Warehouse
Rail and Water Facilities
Pool Car Distribution—Storage—Forwarding
Private Siding Western Maryland Railway

BALTIMORE, MD.

Incorporated 1905

Baltimore Storage Co., Inc.

N. W. Cor. Charles and 26th Sts.

Baltimore 18

MODERN FIREPROOF WAREHOUSE. EVERY FACILITY
FOR THE HANDLING OF YOUR SHIPMENTS.

Exclusive Agents for

AERO MAYFLOWER TRANSIT CO.

Vans Coast to Coast

Canada and Mexico

BALTIMORE, MD.

CAMDEN WAREHOUSES

Rm. 201, Camden Sta., Baltimore 1

Operating Terminal Warehouses on Tracks of

The Baltimore & Ohio Railroad Co.

A.D.T. Private Watchman, Sprinkler

Storage—Distribution—Forwarding

Tobacco Inspection and Export—Low Insurance Rates

Consign Via Baltimore & Ohio Railroad

BALTIMORE, MD.

Main Office: 6200 Bk. Philadelphia Rd.

U. S. Customs
Bonded Drymen



**DAVIDSON
TRANSFER & STORAGE CO.**

Household Goods and Merchandise—Storage—Delivery
—Unloading—Special Flat Bed Trucks for Lift Cases.
Agents: Allied Van Lines . . . Member N. F. W. A.

ists will be available when the need becomes acute.

Perhaps the motivating force must come from business men themselves. Our colleges would unquestionably have turned out more broadly trained distribution specialists had the demand for their services been made known. With the growing awareness on the part of top management of the problems of distribution, the requirements in terms of training will be transmitted back to our colleges and we may expect the same results they have been able to accomplish in other lines.

Summary

We have suggested an over-all approach to cost reduction based on research. Those who slavishly guide their actions by slogans, such as "distribution costs too much" may find themselves losing out in the competitive struggle. Rather, an over-all balancing of production and distribution costs to give high volume production of a good product to maximize fair profits appears to be the course of wisdom. Beyond the internal economies possible to the firm through this approach, lie the economies through closer coordination of the functions between firms farther up the stream and those below.

To accomplish these objectives, we

will need a greater awareness on the part of top management of the over-all distribution problems of moving goods from mines and farms through manufacturers, wholesalers, and retailers to the ultimate consumer. Every possibility of cost reduction at every step and at every stage in the movement of goods through production and distribution should be explored. Lower costs and lower prices to ultimate consumers mean broader markets.

To implement this program we will need more and better trained research men, men who have the specialized training and the scientific approach that will help us to solve these over-all problems.

**Coast Storage Firms
Under New Ownership**

Tim Griffin and Jim Cummins, owners of the Market Street Van & Storage, Inc., in San Francisco, Cal., have announced purchase of Coast Van Lines and Coast Van & Storage in Los Angeles and San Diego, Cal., which they will continue to operate under their present names.

Tom Gallagher of San Francisco, is also associated in this deal.

They are operating three warehouses in Los Angeles and have just completed a new building at 423 East 3rd St., which is served by spur track and will serve as the main office.

They will be represented in San Francisco by the Market Street Van & Storage, Inc.

**CNR's "9000"
Released By Military**

One of the best known diesel locomotives in Canada—the 9000 of the Canadian National Railways—has just been discharged from military service. On the secret list since shortly after the start of the war, the 9000 had been completely remodeled in the railway's Transcona shops to furnish power for an armored train.

These shops also converted four all-steel Canadian National flat cars and three all-steel box cars for this train, which was used in British Columbia until the Japanese invasion menace disappeared. The locomotive and cars looked alike, making it difficult for the enemy to pick out the engine in case of an attack.

Pre-fabricated Warehouses

First unit of a series of warehouses for government-owned machine tools storage in the Chicago area has been erected by Reconstruction Finance Corp. on a site in Hammond, Ind., adjacent to Indiana Harbor Belt R.R. Units are described as prefabricated metal storage sheds with removable side walls, constructed in sections, which facilitate structure expansion as more space is required. (Slawson)

Cost Factors in Distribution

(Continued from page 20)

of \$1 per 100 lb. Because of inefficiency at his factory the manufacturer forwarded consignments in less than carload lots which resulted in a "less than carload" freight rate of \$1.75 per 100 lb, or 75 per cent greater than necessary regardless of whatever agreement was reached by the seller and buyer as to which of them should pay the difference.

Perhaps the amount involved in this instance was small when compared with the transportation bill of the whole country, but multiplied by similar errors throughout the nation a sizable sum is added. Banish mistakes of this sort and another step will have been taken in the march toward reducing cost of distribution.

Looking at the other side of the shield for our second example it is noted that many manufacturers are searching for new avenues by which they can assist retailers in meeting the cost problem. Take the manufacturer of household furniture. A manufacturer packs and ships the furniture to a retailer who, upon receipt of the goods, has to unpack every

piece, examine it, and make minor repairs by removing mars, scratches and blemishes. All this increases the retailer's expense which in turn swells the cost of distribution.

Less Handling

When peace-time activities are fully resumed it is probable that this expenditure will be done away with. Discontinuance of the unpacking, inspecting and minor repairing by the retailer is in sight. With the manufacturer using a hard surface finish, resistant to blows and scratches, the furniture can be received by the dealer and stored without unpacking. Later, when a sale is made, the retailer can deliver the furniture to the front door of the purchaser (ultimate user), there to be unpacked and placed in the home by the dealer's employee, the packing material to be disposed of without bother to the householder.

This improvement in manufacturing will produce savings directly beneficial to those in the household furni-

ture business by reducing the cost of handlings and, consequently, lowering the cost of distribution.

Segment; section; sub-division; bit by bit each component part of the cost of distribution must be scrutinized, analyzed and reviewed if the mystery pertaining to "mass distribution" is to be uncovered as successfully as has been done in the sphere of "mass production."

DPC Authorizes New Robbins Building

The Rubber Bureau of the War Production Board released preliminary information on an additional project in the heavy-duty truck tire expansion program, following an authorization of funds by the Defense Plant Corp.

The DPC authorization provides Robbins Tire and Rubber Co., at Tusculum, Ala., with \$500,000 to proceed with construction of an additional building, expansion of present buildings and procurement of new equipment. The \$500,000, which represents only a part of the total outlay required, has been authorized now to permit the company to move ahead without delay on preliminary aspects of the expansion, pending further grants of funds by DPC. The new facilities are expected to come into production about May.

BALTIMORE, MD.

Martin J. Heilly, Pres. A. Bernard Maine, Vice-Pres.

FIDELITY STORAGE CO.
2104-6-8 MARYLAND AVE.

Baltimore's Modern Fireproof Warehouse
Your Clients Efficiently Served All Collections Promptly Remitted
MOTOR FREIGHT SERVICE
Household Goods Pool Car Distribution Merchandise
Member of N.F.W.A.—M.F.W.A.—M.M.T.A.
Agent for Allied Van Lines, Inc.

BALTIMORE, MD.

SECURITY STORAGE CO.

'15 W. North Ave., Baltimore 1
EFFICIENT WAREHOUSEMEN
MOTOR VAN SERVICE
RESPONSIBLE AND COURTEOUS MANAGEMENT

BALTIMORE, MD.

Norman Geipe

VAN LINES

5 FIRE-PROOF STORAGE WAREHOUSES
524 to 534 WEST LAFAYETTE AVE., BALTIMORE 17
The Most Complete Moving and Storage Organization in Baltimore.
Long Distance Moving to 34 States—Certificates granted—MD-53452.
Tariff-Independent Movers' and Warehousemen's Assn.

BOSTON, MASS.

Operated by Boston Tidewater Terminal, Inc.

CHARLES RIVER STORES

131 BEVERLY STREET—BOSTON 14, MASS.



Located within the city limits. Adjacent to North Station. Brick and concrete buildings, some sprinklered and heated. A.D.T.

burglary-alarm service. 300,000 square feet U. S. Customs & Internal Revenue bonded space. Boston & Maine R.R. delivery.

BALTIMORE, MD.

AN ASSOCIATED

Terminal Warehouse Co.

Davis & Pleasant Sts., Baltimore 2
Operating four Modern Warehouses on tracks of Pennsylvania Railroad Company
Trucking Storage
A.D.T. Watchmen
Pool Car Distribution
Financing Bonded Space

Founded
1893



Resources
\$750,000

WAREHOUSE

BOSTON, MASS.

CONGRESS STORES, INC.

38 STILLINGS ST., BOSTON 10

PERSONAL SERVICE

GENERAL
MERCHANDISE STORAGE

Pool Car Distribution

Sidings on N. Y., N. H. & H. R. R.

Protected By
A.D.T. Service

Member
Mass. Warehousemen's Assn.

CENTRAL LOCATION

For Shippers' Convenience, States, Cities and Firms are Arranged Alphabetically

D and W March 1945—97

MASSACHUSETTS

BOSTON, MASS.

CLARK-REID CO., INC.
 GED E. MARTIN, President
 GREATER BOSTON SERVICE
 HOUSEHOLD GOODS STORAGE—PACKING—SHIPPING
 OFFICES: 87 Charles St., Boston
 180 Green St., Cambridge
 NEW YORK, NEWARK, AVE.

BOSTON, MASS.

Established 1896
 PACKING MOVING
 D.W. **DUNN** CO.
 STORING SHIPPING
 Member May W. A. 1175 Washington St.

BOSTON, MASS.

FITZ WAREHOUSE CORPORATION
 operating
 ALBANY TERMINAL STORES
 137 Kneeland Street, Boston 11
 GENERAL MERCHANDISE STORAGE
 B. & A. R.R. Delivery
 Represented by
 NEW YORK ALLIED DISTRIBUTION CO. CHICAGO
 18 WEST 41ST ST., PHILADELPHIA 4-0940 1125 NUBERRY AVE., MILWAUKEE

BOSTON, MASS.

Hoosac Storage and Warehouse Company
 Lechmere Square, East Cambridge 41, Boston
 FREE AND BONDED STORAGE
 A.D.T. Automatic Fire Alarm
 Direct Track Connection B. & M. R. R.
 Lechmere Warehouse, East Cambridge, Mass.
 Hoosac Stores, Hoosac Docks, Charlestown, Mass.
 Warren Bridge Warehouse, Charlestown, Mass.

BOSTON, MASS.

J. L. KELSO COMPANY
 Established 1884
 General Merchandise Warehouses
 UNION WHARF, BOSTON 13
 Connecting all railroads via A.D.T. Service
 Union Freight Railroad Co. Motor Truck Service
 Member of Mass. W. A.

BOSTON 13, MASS.

453 COMMERCIAL STREET
MERCHANTS WAREHOUSE CO.
 Specially equipped to handle bale and bag commodities. Private railroad siding connecting all railroads. Free and bonded storage.
 A. W. A. M. W. A.

BOSTON, MASS.

QUINCY MARKET COLD STORAGE AND WAREHOUSE COMPANY
 Incorporated 1881
 178 Atlantic Ave., Boston 10, Mass.

BOSTON, MASS.

WIGGIN TERMINALS, Inc.
 50 Terminal St. Boston (29) Man.
STORAGE
 B. & M. R.R. Mystic Wharf Boston
 N. Y. N. H. & H. R.R. E. Street Stores South Boston

Functions of Modern Traffic

(Continued from page 22)

failure. The traffic manager and his assistant spent the greater part of the night with the lieutenant who is the Resident Inspector of Naval Material, seeing that certain vitally needed materials actually moved forward in the cars and on the trains for which they were scheduled and which would bring them to our fighting men in the shortest possible time by the route chosen.

Heavy Loading

It goes without saying that our industry is cooperating with Washington by doing its share to aid in carrying out emergency measures which have been necessary. Walter Bockstahler, formerly Assistant Director, Division of Traffic Movement, Office of Defense Transportation, Washington, D. C., commented on the unusually heavy loading of a freight car which helped to save much needed equipment. He stated in part:

"This car contained a total weight of 117,365 lb. on which the freight charges, exclusive of war tax, amounted to \$3,254.91. You loaded practically the equivalent of

almost four ordinary cars in one vehicle. This indicates a splendid spirit of cooperation on your part. You are to be highly commended for your effort and your accomplishment.

"I doubt if you fully realize just how valuable a contribution you made to our transportation problem in your loading of this car. Before the war the balance of carload traffic was from the Pacific Coast toward the East, but during the past year and a half this direction of traffic flow has been completely reversed. At present, there is a very heavy overbalance of westbound carload traffic. Under the circumstances, every single box car moving in a westerly direction, which can be saved, results not only in the saving of some 2,000 miles of westbound haul but also the saving of the same mileage used to bring the empties back from the Coast. In this case, assuming that you would have normally used three cars from the westbound movement, by your heavier loading you eliminated the necessity of moving two additional cars all the way out to the Coast and all the way back again, a net

mileage saving of about 8,000 or 10,000 miles.

"You are assured of our appreciation of your wholehearted cooperation."

National Transport

The present position of Washington with regard to our national transportation and its part in winning the war reminds one of a somewhat similar situation. It is that of the British High Seas Fleet in the First World War and its commander, the late Admiral Sir John Jellicoe. The British Fleet was unquestionably stronger than that of the Germans, over which it stood guard, but there always remained the possibility that through mismanagement or even through bad luck the German fleet, then vastly more powerful than it is today, might gain the domination of the seas. So it was said of Admiral Jellicoe, that he was the only man on either side who had it in his power to lose the war in a single afternoon. On him rested the heavy burden of making for the British battle fleet the plans

LYNN, MASS.

LYNN STORAGE WAREHOUSE CO.
154-156 Pleasant St.

The only Fireproof warehouses on the North Shore complete with every facility and private sidings for the storage and distribution of merchandise, automobiles and household goods. 100,000 sq. feet of space.

Distributors—Packers—Shippers—Movers
Member N.F.W.A.—Mass. F.W.A.



NEW BEDFORD, MASS.

IN THE
NEW BEDFORD AREA
the Best is



NEW BEDFORD STORAGE WAREHOUSE CO.

3 MODERN WAREHOUSES
FURNITURE STORAGE DEPARTMENT



100,000
sq. ft.



SERVING NEW BEDFORD—CAPE COD—
MARTHA'S VINEYARD—NANTUCKET
Since 1910



WINTERSFIELD, MASS.

T. ROBERTS & SONS, INC.

Local and Long Distance Furniture Moving

Fireproof Storage Warehouses
Household Goods Storage — Packing — Shipping
Merchandise Storage and Distribution
Pool Car Distribution

DIRECT R.R. SIDING B. & A. R.R. OR ANY R.R.

SPRINGFIELD, MASS.

**Atlantic States Warehouse
and Cold Storage
Corporation**

385 LIBERTY ST., SPRINGFIELD 1

General Merchandise and Household Goods Storage
Cold Storage for Butter, Eggs, Poultry, Cheese, Meats
and Citrus Fruits

B. & A. Sidings and N. Y., N. H. & H. R. R. and
B. & M. R. R.

Member { A. W. A. Daily Trucking Service to
M. W. A. suburbs and towns within
a radius of fifty miles.

SPRINGFIELD, MASS.

F. G. Mooney, Pres. J. G. Hyland, V-Pres.

**HARTFORD DESPATCH
and WAREHOUSE CO., Inc.**

214 BIRNIE AVENUE, SPRINGFIELD, MASS.

Bonded Warehouses . . . Pool Car Distribution . . . Household and
Merchandise facilities . . . Private Siding . . . Our fleet covers Connecticut
and Massachusetts daily. Warehouses at Bridgeport and Hartford, Conn.
Members: NFWA—AWA—ACW—AYL Agents

SPRINGFIELD, MASS.

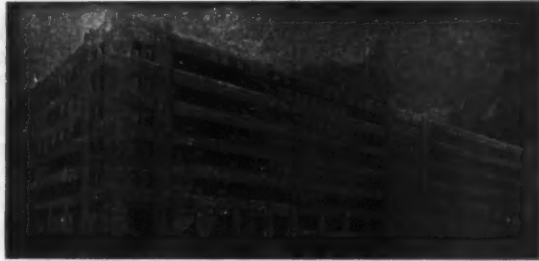
MEMBER



J. J. Sullivan The Mover, Inc.
Fireproof Storage

Offices: 385 LIBERTY ST., SPRINGFIELD 1
HOUSEHOLD GOODS STORAGE, Packing,
Shipping, Pool Car Distribution of All Kinds
Fleet of Motor Trucks

DETROIT, MICH.



Central Detroit Warehouse

Located in the heart of the wholesale and jobbing
district, within a half-mile of all freight terminals.
Modern buildings, lowest insurance rate in city.

Warehouse & Terminals Corporation
Wyoming and Brandt Avenues

Modern concrete buildings, fully sprinklered,
serving the west side of Detroit and the city of
Dearborn. Specializing in heavy and light package
merchandise and liquid commodities in bulk. Con-
nected directly with every railroad entering the city.

Central Detroit Warehouse Co.
Fort and Tenth Streets, Detroit 16, Mich.

DETROIT, MICH.

DETROIT STORAGE CO.

Established 57 Years

**STORAGE WAREHOUSES
ALL OVER DETROIT**



Local and Long Distance Removals
Foreign and Domestic Shipping

Main Office

2937 East Grand Boulevard
Detroit 2

Telephone Trinity 2-8222

DETROIT, MICH.

4444 LAWTON AVE.

DETROIT TERMINAL WAREHOUSES, INC.

N.Y.C. R. R. SIDING
LOADING DOCKS

PRIVATE OFFICES
DRY STORAGE



PRIVATE POLICE PROTECTION • MOTORPOWER HANDLING EQUIPMENT

DETROIT, MICH.

John F. Ivory Stge. Co., Inc.

MOVING—PACKING—SHIPPING
STORAGE—PRIVATE SIDING

8035 Woodward Ave., Detroit 2, Mich.

and decision that might be decisive of the war. In a somewhat similar way paramount responsibility in this war rests upon Washington.

Eastman Quoted

The late Joseph B. Eastman, former director, ODT, shortly before his death wrote us advising he was vitally concerned with the movement of materials and supplies. He stated that any unnecessary interruptions, however short, disturbs the delicate balance of production and distribution which must be maintained during the war. He sent similar letters to the presidents of all our country's leading industries. In his letter to the president of our company, Mr. George W. Burpee, Mr. Eastman stated in part:

"As head of the Federal Agency charged by the President with responsibility for wartime domestic transportation, I feel I should call to your personal attention the fact that transportation as a whole in this country will be confronted, for a period extending over at least the next six months, with what promises to be very critical conditions.

"I am asking you, as the responsible head of your company, to give us wholehearted cooperation in this 'over-the-top' drive.

"It is my earnest hope that I shall have your vigorous support, which I assure you will help to safeguard the transportation of your materials and products."

Instructions to our various plants were immediately issued by Mr. Burpee.

Lt. Col. C. D. O'Neal, transportation officer, QM Depot, Jersey City, N. J., recently said:

"Any waste of transportation facilities, in the form of delays in the loading, unloading, and release of cars, or failure to utilize them to their full capacity, is the same thing as wasting munitions, or war supplies of any kind. It is handing a weapon to Hitler and Hirohito, because it retards the war effort, reduces the effectiveness of our armies in the field and, proportionally, lengthens the war; and the lengthening of the war means the loss of more lives among our soldiers, not to mention the cost in money and other things.

"In the logistics of war, transportation is the dynamic element that transforms static supply into active agencies that win victories!"

That a traffic system comprises the very veins and arteries of the company and that the traffic department is the heart of it seems obvious. By analogy, the traffic manager may be considered a cardiologist. It is his duty to see that the patient develops no cardiovascular disease. Where the electrocardiogram gives evidence of such symptoms, it is the traffic manager's duty to indicate the proper prophylactic or therapeutic treatment.

Canada Railway Uses Aluminum on Box Cars

For the first time in Canada, aluminum is being used in construction of railway freight equipment with roofing and siding of three box cars for the Canadian National Railways. "It is an experiment," said N. B. Walton, C. B. E., executive vice president of the C. N. R., "for it is not definitely known whether aluminum will wear as well as steel in actual freight service."

The change will reduce the weight of each car by 3,600 lb., which is considerable when C. N. R. motive power is often obliged to haul 100-car freight trains heavily laden with urgent war traffic.

Construction Industry Offers Wide Employment

Statistical studies show the construction industry provides a large volume of both direct and indirect employment and a greater stimulus to general business activity than any other industry, the Associated General Contractors of America, the national trade association of leading construction firms, has reported.

The Association urged the necessity for immediate development of large scale construction programs, both private and public, which can be started when cuts are made in war production.

DETROIT, MICH.

GRAND TRUNK WAREHOUSE & COLD STORAGE COMPANY

DETROIT 11, MICH.

Ferry Ave., E. and Grand Trunk Railway



Local, regional and storage-in-transit service, offering every facility known to modern distribution.

New
Ultra-Modern
Plant

Trunk Line
Terminal
Complete Service

Continent-wide Connections



AMERICAN WAREHOUSEMEN'S ASSOCIATION

100—D and W, March, 1945

DETROIT, MICH.

Henry & Schram Storage & Trucking Company

"The Warehouse of Service"

MERCHANDISE STORAGE—GENERAL TRUCKING
CAR LOAD DISTRIBUTION

Private Siding on

Wabash—Canadian Pacific—Pennsylvania—Pere Marquette Railways

A.D.T. Aero Automatic Fire Alarm and A.D.T. Burglary and Fire Protection

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Merchandise and Household
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—Modern Fireproof Building—
Pool Car Distribution—Private Staging
P.M.R.R.
Trucks for Local Deliveries
Member of A.W.A.—May W.A.



State Air Regulations

(Continued from page 25)

and operate airplanes privately and for purposes other than those incident to interstate air transport. In the case of interstate air carriers, only relatively few of such airports, or ever will be, used because the Federal Civil Aeronautics Authority determines the specific communities, and by the same token their airports, which will be served by interstate airlines and, in doing so, selects only communities where service can be financially sustained. In the case of private operators, however, they rightly demand for themselves access to the services of every airport located in their state.

"It is conceivable that in the development of civil aviation in some states airports will be deemed necessary in as many as 100 municipalities. On the other hand, interstate air carriers for many years may not be able to be permitted to serve at more than 10 of them. Clearly, it would be unfair and detrimental not only to the interstate carriers but also to the 10 par-

ticular communities concerned to ask them to forego gasoline tax refunds so that the proceeds could be scattered over the state on airports in 90 other communities besides their own.

"Consequently, it seems to be the better part of wisdom for the state legislatures to continue refunds of gasoline taxes paid by interstate air carriers or prescribe that if refunds are abandoned all monies derived therefrom at any particular airport must be earmarked and used exclusively for aeronautical purposes at such airport."

To carry their message to citizens of every state for an understanding of the implications and consequences of hampering state regulations and inhibitive taxes, Col. Gorrell made public an instructive booklet, "Keep America's Aviation Strong" which, he said, the twenty-four airline members of the Association were distributing around the country so that everyone might fully understand and appraise the issues involved.

Scrap Material

Yearly average of scrap material handled by Canadian National Rail-

ways is 16,556 tons, with a value of \$1,013,363 for each year.

Shippers' Convenience, States, Cities and Firms are Arranged Alphabetically

Gar Wood Announces Veterans' Aid

Physical requirements of every job at Gar Wood Industries, Inc., manufacturer of hydraulic hoists and dump bodies for trucks, truck-mounted winches and cranes, and bulldozers, etc., are being analyzed to determine exactly what sort of work can be performed by partially disabled servicemen, it was disclosed by Glen A. Bassett, president, in announcing formation of a veterans' department.

Any veteran applying to the Gar Wood employment office is automatically referred to the veteran's department. If found physically able to return to his old job, he is immediately reinstated. If wounded and unable to fill his former job, the ex-serviceman will be assigned to the sort of work which his disabilities permit him to fill.

Acquires Canning Co.

Stokely-Van Camp, Inc., Indianapolis, Ind., has acquired Hoopston (Ill.) Canning Co., for operation under its own name as a wholly-owned subsidiary. Stokely's "Finest" label will be added to present Hoopston products. Phil A. Schmith, Stokely central area production manager, will serve in a supervisory capacity, and Gilbert Trego, long with the Hoopston plant, will be manager.

D and W, March, 1945—101

Air Travel Sales System

(Continued from page 25)

makes in one day the business calls which required two days when he depended upon ground transportation, and the percentage of time saved increases with the distance flown.

Verrier knows of no other firm, except those manufacturing planes, which maintains a private flying route such as his. He is not, however, the first air-traveling salesman, even for Breeze. Thirteen years ago, Breeze was conducting experiments in light plane travel for business purposes. Two pilots well known in the era of endurance flights flew for several years on business for the company. Jimmy Steenson started in 1931 and Johnny Warren in 1933. They operated on short hops in the East and carried a panel of Breeze products on one trip to the West Coast.

Mr. Lucas clocked Verrier, company's newest aerial representative,

on a recent 4,000-mile round trip through Arizona, New Mexico, Texas, Oklahoma and Kansas.

"He made approximately one-third more business calls than he could have made by other means of travel," according to Mr. Lucas, "yet with all these additional contacts, the trip required two days less than is usually spent on the same route."

Aside from saving the company's time and increasing the speed of service calls to customers, the plane is equipped with Breeze accessories and provides a perfect exhibit of products under actual flying conditions.

A typical dramatic example was given recently when Verrier, keeping a business engagement, flew through an electrical storm over a desolate, mountainous section of Arizona, using Breeze safety devices to reach an auxiliary field for an emergency landing.

Work on the development of the type was started by the St. Louis Plant, Airplane Division of Curtiss-Wright, in Spring, 1939, and the "Ascender" was first flown at Scott Field, Ill., July 18, 1943. Several other flights were made at Lambert Field, St. Louis, Mo.

Publication of performance details of the Curtiss "Ascender" is still restricted by the Army.

Gas Turbine Development

(Continued from page 58)

until recently has been able to cope with the high temperatures (1,200 degrees F, minimum) at which a gas turbine should operate. Now, however, pressed by wartime needs, this question has been answered, chief metallurgists believe.

Regarded as an already active threat to the positions held by the internal combustion and the steam engines, an article outlining its advantages and written by Fred K. Fischer and Charles A. Meyer, Westinghouse Electric and Mfg. Co. engineers, which was published in the "Westinghouse Engineer," said in part:

"In function the gas turbine closely resembles the internal combustion engine. In each, air is compressed, liquid fuel is injected and burned, and finally the high-temperature gases under pressure are expanded to at-

Curtiss-Wright "Ascender"

(Continued from page 58)

synchronized to fire through propeller, nor need rate of fire be limited; increased rudder effectiveness for recovery from spins; less danger to pilot from a fire in engine; better

handling characteristics on ground; better handling characteristics at very high speed because elevators, being in front, are removed from compressibility wake of wing.

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Agent for Allied Van Lines, Inc.

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Local and Long Distance Moving
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Packing—Crating—Bonded Storage
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Storage & Transfer Co.
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Kansas City 6

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A.D.T. BURGLAR ALARM
LOWEST INSURANCE RATES
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400,000 sq. ft.
Trackage on four railroads
Truck docks—Low Insurance
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Sprinklered—A.D.T.—Fleet modern Equipment
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3519 Page Boulevard
Agents for North American Van Lines



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St. Louis 6, Mo.

Member of A.W.A.—Mo.W.A.—St.L.M.W.A.



mosphere, producing the process, useful power in excess of that required to compress the air.

"The internal-combustion engine uses one structure for all three functions, i.e., the air is compressed, liquid fuel burned, and gases are expanded all in a cylinder. Because the engine makes one structure do all three jobs it must do them successively, so that the power output is cyclically interrupted.

"The gas turbine power unit, on the other hand, separates the three operations, assigning a separate specialized mechanism for each. The air is compressed in a physically separate compressor, the liquid fuel is burned

in an adjacent combustor, while the gas turbine itself serves only to expand the gases of combustion, enabling it to drive the compressor and some useful load. (Hence the name gas turbine. Petroleum, not gas, is the fuel.)

"By this system each of the three elements operates continuously, so that the power flow from the gas turbine unit is continuous.

"Because each can be designed for a single purpose and because the speeds can be high the total weight of a gas turbine power unit can be much less than that of an internal combustion engine."

TWA Establishes New Oceanic Record

Transcontinental & Western Air, Inc., surpassed its records in intercontinental operations for the air transport command in 1944, C. E. McCollum, regional general manager, made known recently.

Averaging 10 ocean flights a day, TWA ferried some 60,000 ATC passengers across the Atlantic Ocean last year, including an estimated 10,000 wounded servicemen, in piling up a record of 40,000,000 tons-miles of operation.

It was estimated that 76,405 hours of flight were accumulated and that eleven and one-half million lbs. of mail, whole blood, and other forms of the highest priority cargo were carried.

Northwest Proposes 'Over the Top' Route

Northwest Airlines has revealed its proposal to fly three round trips per week between the United States and Tokyo, Shanghai and Manila if it is given authority to establish its applied-for "over the top" route to the Orient.

Hearings on the airline's case, presented to CAB in the form of exhibits, were to be conducted in February.

Filing of the exhibits represents the first step by Northwest Airlines to establish itself in the international air transportation field.

SA Schedule Coordinated by PAW

Connecting air services to interior points in Mexico and Venezuela by associate companies of Pan American World Airways are provided from on-line stops along the Latin American trunk routes of this American international airline.

Monthly timetable of Pan American system now carries complete schedules of Aeronaves de Mexico, S.A., and Aerovias Venezolanas, S.A., companies in which Pan American holds minority stock interests.

Continental Capacity Increased

In February, Continental Air Lines began service with 21 passenger DC-3 planes over its Denver, Colo.,-Wichita, Kan.,-Tulsa, Okla., route, it has been announced by Robert F. Six, president of Continental Air Lines.

The passenger planes will replace 14 airliners which Continental has been using over this route, providing seven more seats on each flight.

War-Restricted Flights Resumed

American Airlines has resumed service into five cities where operations have been suspended due to wartime restrictions.

New Haven and Bridgeport, Conn., Springfield-Westfield, Mass., Akron, O. and Lynchburg, Va., now receive their first flagships since post-Pearl Harbor period when the Army requested American to curtail service in the interest of the war effort.

Flights serving these areas will be through, or connecting, flights to all principal cities in the United States, Canada and Mexico.

American has added another round trip to its Washington service as well, with Flight 301 departing from New York at 9:20 a.m. Return trip leaves Washington at 12:10 p.m.

'Nine-O-Six' Rewarded

Flying equivalent of 100 trips from New York, N. Y., to San Francisco, Cal., without anything but routine check-over on three of its four engines, the Boeing Flying Fortress "Nine-O-Six" has won from Wright Aeronautical Corp. an accolade as leader in engine endurance among aircraft operating in theaters of war.

The "Nine-O-Six," said a special report to the engine company, has been serving on ferry duty in the Mediterranean region, often under the noses of enemy fighters.

Air Cargo Loader



CARGOVEYOR, a new development and addition to the Rapid-Power Booster Line, especially designed for air cargo loading and unloading, consists of an electrically driven, reversible, endless belt mounted on 4-wheel chassis with 5th wheel steering mechanism. Developed for PCA, it is built in a standard length of 18 ft. Black-Hawk hydraulic lift mechanism enables it to be adjusted from horizontal position to delivery height of 10 ft. 6 in. at an operating pitch of 25 deg.

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One Contact, One Responsibility and rates no higher through our Organization.

20 Years of Experience

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D and W, March, 1945—105

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1876 1945

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Storage & Transfer Co., Inc.

Pool Car Distribution

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Grand Island Storage Co. Grand Island, Nebr. 311 W. 4th Street

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GORDON

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STORAGE & MOVING COMPANY

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HOUSEHOLD GOODS STORAGE

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MODERN FLEET OF VANS FOR LOCAL AND LONG DISTANCE MOVING

Increased Use of Pallets

(Continued from page 37)

load" is to design shipping containers and pallet sizes or dimensions to fit a freight car instead of designing them to hold a certain amount of merchandise. Using the Navy method, one woman on a fork truck removed merchandise from storage and loaded a freight car in two hours. Before the system was adopted, the same work required 14 men a half day each. This spectacular saving is being repeated in many plants.

The claims made for the pallet system in streamlined grocery warehouses brought about the request that the Bureau of Foreign and Domestic Commerce study selected one-story pallet operations to determine whether or not the claims made were justified. As you know, a survey was made sometime ago among a group of wholesale grocery warehouses to determine the practical advantages of stream-lined distribution over the older methods. The houses visited ranged from small to large as to footage, sales volume, and tonnage.

The survey disclosed that because of wartime restrictions some wholesalers with modern warehouses felt that they had to abandon their assem-

bly lines, for the time being at least, and return to outdated methods of order picking from all stock, manual tiering, and case-by-case handling. This turning back was necessary according to these firms, because their inventories became unbalanced, while new lines, new brands, and changes in packs, made continuation of the assembly line difficult.

One-Story Operators

On the other hand some of the one-story operators have had no trouble in continuing to use up-to-date equipment and the best techniques. More important they continue to operate at very low cost. I understand that five of the firms visited or studied perform all warehouse functions and pay their occupancy costs, inventory costs and the wage costs associated with receiving, storing, order selection, and truck loading, for approximately 2 per cent of sales.

The most modern houses with the lowest warehouse costs use the pallet system of operation, linked with either punch-card or a preprinted order form office procedure. This pallet type of operation involves the use of

fork lifts or other self-loading automotive types of tiering equipment. enables all internal handling of merchandise to be on a bloc basis and permits a very much shorter assembly line than do other systems. Needless to say, the operation is faster.

The recent survey to which I have referred, developed the need for standardization of skids and pallets in order that such loaded platform might flow readily and further, vertically, through the various stages of distribution in the grocery trade. The results of the survey revealed that some wholesalers received carlot and dray-lot shipments packed in cars or drays, case by case, and made these up into pallet or skid loads at the receiving dock or platform, thus duplicating the case by case handling that had to take place when the manufacturer or other shipper loaded the car or dray.

Pallet Standardization

The need for pallet standardization was brought to the attention of the Division of Simplified Practice of the National Bureau of Standards with the suggestion that steps be taken to set up a simplified list of recommended standard sizes or dimensions for pallets along the same lines that worked out for skid platforms in 1930. At the joint invitation of the

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National Bureau of Standards and the Bureau of Foreign and Domestic Commerce an informal conference was held at the Department of Commerce on Aug. 16, 1944. Representatives of various interested groups were present at this meeting, and it was unanimously voted "that in view of the recognized value of a simplification and standardization of pallets and skids, it is the sense of the meeting that exploration of the possibilities should be undertaken by the Department of Commerce."

The Division of Simplified Practice through personal contacts and considerable correspondence has discovered that interest in pallets and their standardization is now far-reaching. An investigation and "Report on the Use of Pallets for Handling and Transportation of Materials" issued by the War Production Board, is an outgrowth of the Conference held at the Department of Commerce in August.

The sheer magnitude of modern military operations and the adoption of devices and techniques of packaging and moving material with maximum speed and safety has revolutionized the handling and transportation of equipment and supplies used by the Army and Navy. And industry will discover that these new methods will revolutionize thinking in many fields of production and distribution. The

Naval Ordnance Materials Handling Laboratory located at the U. S. Naval Ammunition Depot, Hingham, Mass., has been responsible for some outstanding developments, many of which are of universal application. An examination of the functions of this Laboratory and the reading of their publication called "The Palletizer" will give many clues to the future of the pallet method of handling shipments.

New Approach to Subject

In the case of the Brooklyn Naval Clothing Depot, a critical situation arose almost overnight because of the staggering quantities of clothing items which had to be handled. This volume increased very suddenly in the early days of the war, and if older methods had been retained all facilities would have been swamped. The figures quickly mounted to over a million garments a day or 1000 carloads and truckloads a week valued at about half a billion dollars a year. In fact, almost overnight the Depot became one of the world's largest clothing manufacturers and handlers. Something revolutionary in materials handling and container design became imperative.

Casting aside all previous packaging methods, the Depot made a completely new approach to the subject

by designing their containers to fit the box car rather than to fit the contents, and by adopting every existing modern device that would speed the handling of containers and the packing of them into cars as well as ships. Starting with the dimensions of the box cars the floor was divided up into 4-ft. squares. This meant two squares across the width and nine or 10 squares down the length, depending on the kind of car. They then ordered tens of thousands of 4-ft. sq. wooden pallets.

There doesn't seem to be any good reason why many industries cannot adopt this identical procedure especially when the contents are of such a nature as to "fit the container which fits the pallet which fits the boxcar." All that is required are the fork trucks, a supply of pallets and the courage to revise container and package sizes and container handling methods. It should be pointed out that the fast unloading of railroad cars is a matter of vital importance at this time when there is a shortage of equipment, materials, and manpower.

Changes Ownership

Procter & Gamble Co., Cincinnati, O., has purchased patents, trademark and good will of Spic & Span Products, Saginaw, Mich., maker of Spic and Span, wall cleaner. (Kline)

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Container Standards

(Continued from page 38)

the strength of the box to resist breaking open.

New Standards Predicted

I predict new standards for our domestic shipping if and when they are set up will follow this latter pattern.

The Navy has recently defined a standard based on performance for radio and radar units. I am not going to quote it in detail but it consists primarily of drops from a specified height onto corners, and flatwise, together with a vibration test which gives the packing materials a great "shake down." I mention this one only because it introduces a new test, the vibration test, which undoubtedly serves a useful purpose.

Worthwhile Precedent

All of these tests and many more predicated on performance are appearing. To my mind it is the most interesting and most worthwhile packaging precedent we have had for many years. It is easy to predict that we will profit from these experiences in postwar shipping so that our new standards will be predicated on per-

formance even though we do not discard specifications entirely.

We are having at present a steadily growing demand for the rewriting of Rule 41 of the Freight Classification in order to correct the growing abuses in connection with corrugated and fibre shipping containers, on the assumption that the mere rewriting of that rule will correct those abuses. It will not.

What is necessary is a growing appreciation on the part of shippers (1)

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of the necessity for a new Rule 41 and (2) for a proper policing of that rule.

I think when Rule 41 is rewritten, if it is to be an effective rule, that it will have to be written in two sections: (1) that section which fixes the responsibility of the shipper and (2) that which will be included in the manufacturers' stamp.

The present Rule 41 defines the specifications, including the bursting test, all of which are certified by the box manufacturer. Shippers, in many instances, have assumed that certificate insures the container has a proper factor of safety for any purpose within the size and weight limits specified. Yet that container is subject to many abuses at the hands of shippers which greatly affects its serviceability.

Responsibility Defined

The box manufacturer does have a definite responsibility in the matter, but the shipper has an equal or greater responsibility.

The new Rule 41 should fix the responsibility of the box manufacturer in Section 1 of the new rule and then proceed to fix the responsibility of the shipper in the second section of that rule.

The performance standard for the box manufacturer should include a

tear strength test of the board along the creased edges; a test of the crush resistance of the box in all directions, and lastly, a bursting test as a criterion of resistance to punctures. These three requirements can be typed on a single letterhead size sheet, possibly a bit less. The standard can be that simple.

As for the shipper's standard, it probably will be based on a foot-pound impact drop onto a corner, onto the three edges which radiate from that corner, and flatwise onto an end, side, and bottom. Under such a test the container must not break open nor may the article inside be damaged to an extent which would justify a claim for damage. The shipper should be made to certify that his container will pass that test.

Short and Simple

That standard too would be short, simple and comprehensive. It would require even less space than the section devoted to the box manufacturer. That test can be made in the shipper's own shipping room, where it should be made.

I am not presenting any detailed figures as to what these standards should be. That is the province of organized groups, not that of an in-

dividual. Our main object is secured in giving publicity to the main principles involved.

Only the Beginning

What I have said about a new Rule 41 is only the beginning of what we may expect. The carriers representatives, with the full support of other interested parties, are agitating that organized industries, such as the manufacturers of furniture, of kitchen ware, of bottles for liquids, and many others, including the canners of food products, should set up industry standards, which, presumably, would be incorporated in the classification regulations. Industries should cooperate with the carriers in these programs because (1) of the importance of insuring safe deliveries of their products, and (2) to minimize unfair competition insofar as costs of packaging are concerned.

These are the shipping container projects which shippers must consider for postwar shipping. They are constructive but the cooperation of organized shippers is needed so that the results may be practical and economical.

Sealed Cars For Export

(Continued from page 40)

by high temperature activation and therefore, may be placed on the surface of parts to be protected without danger.

Conclusions

Experience with varied types of apparatus in highly humid atmospheres has demonstrated the necessity for protecting electrical machinery and exposed metal surfaces during sea shipment. This project indicates the possibilities for improved protection against atmospheric humidity, condensate; as well as rain, sea spray and deck wash; for large equipment which hitherto has been either left to mercy of the elements or at best meagerly protected. A considerable number of these trains have been processed in this manner.

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Ingle Transfer and Storage Co.

44 Valley St.

Asheville, N. C.

Merchandise and Household Goods

2 Fireproof Warehouses

Pool Car Distribution

Consign shipments via Sou. Ry.

Asheville's Bonded Warehouses

CHARLOTTE, N. C.

AMERICAN STORAGE & WAREHOUSE CO.

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MERCHANDISE STORAGE ONLY. POOL CARS DISTRIBUTED.
MOTOR TRUCK SERVICE LOCAL AND DISTANCE. PRIVATE
RAILROAD SIDING. SPRINKLERED.

ESTABLISHED 1908

CHARLOTTE, N. C.

Carolina Transfer & Storage Co.

1230 W. Morehead St., Charlotte 1, N. C.

Bonded fireproof warehouse.

Household goods and merchandise.

Pool cars handled promptly. Motor Service.

Members A. W. A. and N. F. W. A.

CHARLOTTE, N. C.

All buildings fully fireproof construction

UNION STORAGE & WAREHOUSE CO., Inc.

BONDED

224-226 & 306-308 West First Street

MERCHANDISE STORAGE — POOL CAR

DISTRIBUTION

Member of A.W.A.—Motor Service

Represented by
NEW YORK 42100 ST. PIERRE 0-0946 CHICAGO 1525 NEWBERRY AVE. MONSIEUR

Safeguarding Property

(Continued from page 47)

Inspected Burglary Protection Appli-
cances, a copy of which may be ob-
tained without charge or obligation
from Underwriters' Laboratories, Inc.,
Chicago, Ill.

Standards of Quality

Underwriters' know that most
professional attacks are skillfully
planned, timed and executed. They
encourage protection because they
know that thieves avoid the well-
protected risks. They have cooperated
with manufacturers in the formula-
tion of standards and laboratory test
procedure, by means of which protec-
tive appliances are classified as to
merit for the benefit of property own-
ers everywhere.

In the examination of a protective
system, engineers of Underwriters'

Laboratories, Inc., determine by ex-
haustive tests that the equipment is
reliable and tamper-resisting. They
insist that it have quality materials
to minimize breakdown and accidental
operation. To the testing engineer,
one test may be worth a thousand
expert opinions. They know, too, that

the criminal may devise new methods
or tools. The engineers literally "turn
burglar" and try to defeat the sys-
tems in various ways.

Some apparatus must perform un-
der rigorous service conditions for
long periods of time. The Labora-
tories' test program, therefore, in-
cludes exposure to rain storms, tem-
perature changes, vibration, corrosive
atmospheres, dust, and many other
conditions. It is required that systems
be designed to withstand these con-
ditions wherever they may exist.

Tear Gas

In the case of tear gas or bullet-
resisting materials, safety to life is an
important added consideration. Tear
gas, for instance, is subjected to tests
to determine toxicity, fire and explo-
sion hazards, as well as effectiveness
in repelling armed robbers. Bullet-
resisting materials are tested at close
range with proof-tested ammunition
shot from high-powered revolvers and

WAREHOUSE MANAGER

Warehouse manager, desires posi-
tion; 15 years' experience in house-
hold furniture warehousing, ac-
quainted with all details.

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100 East 42nd Street, New York 17

pistols. Fragmentation from the test specimen is a cause for rejection. If it is not safe it is not good protection.

Since many devices fail to pass these rigid tests, the Laboratories is truly a "proving ground" where many unsafe devices are eliminated before the protective devices are installed in private or public buildings.

Enforcing the Standards

To assure that standards of quality are not forgotten, constant supervision is exercised over the construction, installation, and maintenance of certificated installations. Approximately 1500 factory and installation inspections are made annually by the Laboratories' burglary protection specialists. Installations not conforming to standards are rejected, corrected, or reclassified. In addition to electrical inspection, central station systems are subject to detailed study of time of response records and to surprise test alarms.

It should be emphasized that no supervision whatever is given by Underwriters' Laboratories, Inc., to non-certificated installations or nonlabeled devices.

Selecting Protection

As a property owner contemplating

Air Express Gains

Air express shipments handled in combined air rail service in 1944 showed an 11.3 per cent rise over 1943, it is announced by Air Express Division, Railway Express Agency.

Upwards of 457,100 shipments were handled for the nation's commercial airlines in this REA combination service, compared with about 404,400 shipments the year before.

Shippers paid approximately \$4,462,966 in 1944 on air express traffic that moved part way by rail as against \$4,063,776 in 1943.

Coordinated air-rail facilities permit deliveries at express speed to many non-airport cities and off-air route towns while assuring improved reliability in completion of traffic schedules, the Agency pointed out.

associates as to their experience with the service company.

5. Specify in the contract that an Underwriters' Laboratories certificate of specified class, grade and extent be furnished upon completion of the installation.

It should be noted that listed systems are not necessarily equivalent in quality or merit, the listing indicating only conformity with adopted standards.

The practices and policies, experience and financial stability of protective companies naturally vary. Also, a protective service company must have intimate knowledge of and access to subscribers' property. All of these factors should be properly understood and considered before selecting protective systems.

Maintenance Important

Alarm protective installations require expert maintenance. This is true because a supervisory current of a few thousandths of an ampere flows through the delicate wiring and other balanced protective circuits required to foil the criminal mind. It is especially true of systems operating on the sound detection, photoelectric, radio frequency or other electronic principles. Many of these systems now in service or in the laboratory

a long-term investment in protection, you might profit by the following approach:

1. Consult an insurance specialist as to what may be required and how it may affect you.
2. Consult your trade association, banker, and an architect, if new construction is planned.
3. Consult a recognized protective company to determine how much protection you can afford.
4. Make inquiries among business

DURHAM, N. C.

DISTRIBUTION POINT OF THE SOUTH



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The Southern Storage & Distribution Co. is in the heart of Durham, providing the logical, modern-minded organization to serve your warehousing and distributing needs with economy and efficiency.

Merchandise Storage, Pool Car Distribution, Private Sidings, Reciprocal Switching. Sprinklered Buildings.



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Shippers' Convenience, States, Cities and Firms are Arranged Alphabetically

D and W, March, 1945—113

NORTH CAROLINA—NORTH DAKOTA—OHIO

GREENSBORO, N. C.



B O N D E D
Champion Storage & Trucking Co., Inc.
 326-28 South Davie St., Greensboro, N. C.
Merchandise & Household Goods
Pool Cars—Trucking Service
 Sprinkler System — Private Siding
 Represented by American Chain of Warehouses, Inc.

GREENSBORO, N. C.

Center of Wholesale District

TATUM-DALTON TRANSFER & STORAGE CO.

311 E. WASHINGTON ST.

MERCHANDISE STORAGE
POOL CAR DISTRIBUTION

Private Siding

Trucking Service

RALEIGH, N. C.

CAROLINA STORAGE & DISTRIBUTING COMPANY

MERCHANDISE STORAGE
POOL CAR DISTRIBUTION

Private Siding

Trucking Service

Members A. W. A. American Chain of Warehouses

WILMINGTON, N. C.

FIREPROOF WAREHOUSE

FARRAR TRANSFER & STORAGE WAREHOUSE

1121 South Front Street

Household Goods — Merchandise
 Long Distance Moving — Pool Car Distribution
 Private Siding, A. C. L. Railroad Co.
 Members, N. F. W. A. — A. T. A.



FARGO, N. D.



Union Storage & Transfer Company
 FARGO, N. DAK.

General Storage—Cold Storage—Household Goods
 Established 1906

Three warehouse units, total area 161,500 sq. ft.; of this 35,320 sq. ft. devoted to cold storage. Two buildings sprinkler equipped. Low insurance costs. Spot stocks. Pool car Distribution. Complete warehouse services. Fargo serves North Dakota and Northwestern Minnesota. Offices 806-10 Northern Pacific Ave. AWA-NFWA-MNWWA-ACW

GRAND FORKS, N. D.

AWA-NFWA-MNWWA

POOL CAR DISTRIBUTION
GENERAL STORAGE
MOTOR FREIGHT TERMINAL

Kedney
WAREHOUSE CO.

Local & Long Distance Hauling of
 Freight and Household Goods
 Allied Van Lines — Agent

AKRON, OHIO



COTTER CITY VIEW
STORAGE COMPANY

70 Cherry St., Akron 8, Ohio

Merchandise Storage.
 A. D. T. Alarm.
 Pool Car Distribution.
 Household Goods Storage.
 Low Insurance.

Member of May. W. A. — O. W. A. — A. W. A.

CANTON, OHIO



CANTON STORAGE, Inc.
FOURTH AND CHERRY, N.E.

Canton 2

Merchandise, Household
Goods, Cold Storage

Pool cars distributed. Private sidings.
 Free switching on all roads. Separate fireproof warehouses for household goods.
 Member: A. C. W. — MAY. W. A. — A. W. A. — O. F. A. A. — O. W. A.



operate on millionths of an ampere (micro-ampere) of current. Expert maintenance service for like reasons is required of many other protective systems.

It should be remembered that protection is a long-term business investment, perhaps 20 or 25 years. Be sure that you choose wisely both as to equipment and the service company. An unwise choice may be a troublesome, unreliable or even a worthless investment.

What to Expect

Assuming that proper protection is installed, will new criminal methods outmode it in a few years? Possibly, but not likely. The engineers anticipate scientific methods not yet tried by criminals. Thus far, the engineers have won. For example, in over 1000 burglary attempts in the past five years on 14,000 certificated mercantile installations, the alarm has operated properly in 97 per cent of the attacks on the protected portions.

Similarly, bullet-resisting enclosures certified as standard have a "batting average" under gun fire of better than 97 per cent over a period of years. In the past 20 years not a single failure has been reported on 7000 certificated bank vault burglar alarms. But equally important is the fact that properties with adequate

protection enjoy an immunity to attack of 40 to one compared to those which are not protected.

Word of Caution

One caution should be carefully observed by the property owner or manager. Insist that all service men admitted to the premises show credentials and positive identification of the legitimacy of their mission. Such failures of alarm protection as have occurred, not infrequently, are the result of tampering in advance and from within.

The criminal may pose as a meter reader, a painter, a salesman or even as the protective service man. It is surprising how easy he may "get by" with the impersonation. Insist also that an inspector of Underwriters' Laboratories, Inc., show the identification card bearing his signature and photograph under the corporate seal and the official signature which appears on the system certificate.

Past records of performance provide ample testimony as to the value of "approved" systems, if adequate in scope. Truly, no investment pays a greater return to the retailer, the wholesaler, the warehouseman, or the financial institution. For crime, as well as for fire and accident hazards, that "ounce of prevention" is indeed

worth while. Even if there were no financial return, the conservation of life, property, and youth would justify the investment for the good of the community, the state and the nation.

Army's Demand For Heavy Trucks

(Continued from page 57)

heavy-heavies in 1945 would not be reduced in proportion to the decline in numbers of trucks, because of the increasing demand for six-wheel drive vehicles at the expense of four-wheel and two-wheel (see attached chart).

"One thing that should help to get more Army trucks out of the factories is the preference for the military established by the Dec. 19 Program Determination on trucks; no such preference was recognized in earlier 'integrated' truck programs."

WPB blamed the December failure to meet forecasts primarily on shortages of components—engines, axles, transmissions, winches. General Motors Corp. fell 15 per cent behind its schedule on 2½-ton six by six (six-wheel drive) dump trucks because of failure to receive enough Garwood winches from the St. Paul Hydraulic Hoist Co.; and the White Motor Co. lost production of 34 ten-ton six by

CINCINNATI, OHIO

90 YEARS OF WAREHOUSING

Cincinnati Merchandise Warehouses, Inc.

7 W. Front St.

Cincinnati 2, Ohio



Merchandise Storage—Pool Car Distribution
P.R.R. & Sou. R.R. Sidings—Low Insurance Rates
Air Conditioned Space—U. S. Customs Bonded

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Member of A.W.A.—O.W.A.



1,000,000 Cubic Feet

Strictly Fireproof

Select the Warehouse Used by the Leaders!

GENERAL STORAGE—COLD STORAGE—POOL CAR DISTRIBUTION—LONG DISTANCE TRUCK TERMINALS

11 Car Switch in Building

Internal Revenue and General Bonded Storage

Insurance Rate 14 1/2c per \$100 per annum

CINCINNATI TERMINAL WAREHOUSES, INC.

41 CENTRAL AVE. HARRY FOSTER, General Manager CINCINNATI 2

CLEVELAND, OHIO

DOING BUSINESS IN CLEVELAND 34 YEARS

CLEVELAND STEVEDORE COMPANY

Equipped for Tough Jobs in the Cleveland Area for Stevedoring and Warehousing

In Cleveland—two lake front warehouses (Docks 20 and 22) each with 20-ton spotting capacity, together with water depth for large lake steamers. Truck platforms. Floor loads unlimited. Served by P.R.R. Inland Warehouse—Junata, Kinsman, and Consolidated. All fireproof. P.R.R. siding at Junata. NYC private siding at Kinsman and Consolidated.

Water—Rail—Truck

Warehousing—Handling—Stevedoring

Five warehouses are ready to help you with your tough jobs. Equipped with 4 locomotive cranes. With baskets and magnets for handling heavy steel or bulk commodities. Other mechanical equipment for handling merchandise.

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CLEVELAND, OHIO

Established 1884

CLEVELAND STORAGE COMPANY, INC.

All Merchandise Storage Facilities

Storage in Transit—East, West and South

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General Office: Guardian Bldg. (14) Phone: Main 3415.

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MUrray Hill 8-8397

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"STORE WITH CONFIDENCE"

Specializing in Merchandise Storage
Pool Car Distribution—Bulk Tank Storage
Operating Own Delivery Equipment
Private Siding N.Y.C.R.R.

FRENCH & WINTER STS.

CLEVELAND 13, OHIO

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"An old organization with young ideas"

THE GREELEY-GENERAL WAREHOUSE COMPANY

located in the

New York Central Freight Terminal

BROADWAY AND EAST 15TH STREET

Cleveland 15

CLEVELAND, OHIO

Member of O.W.A.

Now there are
WATER, RAIL AND
TRUCK FACILITIES

4 LEDERER
TERMINALS

Cleveland's Only Lakefront Public Warehouse with Direct
Connecting R.R. Facilities Offices: FOOT OF E. 9th ST.
Cleveland 14

A. D. T. Protection

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DIRECT FROM FREIGHT CARS



SHIPMENTS to Cleveland, consigned to The Lincoln Storage Company over any railroad entering the city, can be handled from freight car direct to our loading platform.

Carload shipments to our private siding, 11201 Cedar Ave., on the N. Y. C. Belt Line, connecting with all R.R.s. entering Cleveland; L. C. L.-Penna. Euclid Ave. Sta. adjoining Euclid Ave. warehouse; other R.R.s. to Cleveland, Ohio.

LINCOLN STORAGE

W. R. Thomas, Pres.

CLEVELAND

11201 Cedar Ave.

5700 Euclid Ave.



Member NATIONAL FURNITURE WAREHOUSEMEN'S ASSN.

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NATIONAL TERMINALS CORPORATION

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Three Modern Fireproof Buildings—Two with Dock Facilities
on Cleveland's Water Front

Most Economical Warehouse and Distribution Service
VIA WATER—RAIL—TRUCK ARE AVAILABLE THROUGH
Cleveland's Largest Cold and General Merchandise Warehouse



CLEVELAND, OHIO

A GREAT COMBINATION!

NEAL in Cleveland
MAYFLOWER coast to coast

Ask about our neighborhood
warehouses . . . with complete
moving facilities.



Exclusive Agent: Greater Cleveland for Aero-Mayflower Transit Co.

The NEAL Storage Co.

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The OTIS TERMINAL WAREHOUSE

HAS THE FACILITIES
TO MEET ALL OF YOUR NEEDS

Downtown location; Modern and fireproof; Low insurance rates;
Enclosed docks and siding on Big 4 Railroad; Daily delivery service;
Office and display space; Telephone accommodations; U. S. CUSTOM BONDED.

General Offices . . . 1340 West Ninth St.

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RAILWAY WAREHOUSES, Inc.

in CLEVELAND, OHIO

For Facilities, Service and Security

Write for Details

Address 3540 Croton Ave., S. E., Cleveland 15, Ohio

Shippers' Convenience, States, Cities and Firms are Arranged Alphabetically

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six wreckers for the same reason. The shortage of winches, in turn, was blamed on inadequate flow of some of the 150 components of this winch, particularly certain castings. Reo Motor Co., also working on the 2½-ton six by six dump truck, fell 37 per cent short of forecast, with production lost because of labor difficulties, time taken out for inventories, and a short-circuit in its power line. There were reports of other smaller losses of production because of manpower shortages, transmission troubles, etc. A number of

companies have complained about delays in receiving freight shipments of components because of the tight railroad freight situation.

The high scrap loss in engine block castings was somewhat reduced last month because of a lowering of the Ordnance Department's specifications, WPB said. Industry representatives have asked for further examination of engineering tolerances set up by the Army, to determine if requirements cannot be lowered nearer to common commercial standards.

gas, and the other sounding an alarm in the ADT central offices, from which it is transmitted to the municipal fire department. In addition, the ADT system is so tied into the Kidde installation that release of the gas will also sound the alarm.

Fur Storage

Among the larger fur storage warehouses equipped with similar Kidde fire-extinguishing systems are those of the J. L. Hudson Co. in Detroit, Ed. Schuster in Milwaukee, and the 18 vaults of the world's largest department store, R. H. Macy & Co. of New York City. The latter, storing 100,000 fur coats per season, with a probable total value somewhere in the neighborhood of \$50,000,000, has been protected by a Kidde high-pressure system for nearly 14 years and like the other two, has not had a dollar's loss from fire since the installation was completed.

No outside sources of energy it is pointed out are required to operate these systems, a fact which contributes greatly to their long life and complete reliability. They do not depend upon a separate electrical system, and will operate promptly and efficiently it is stated even though other electric and mechanical facilities in the plant may be disabled. The heat actuators also are self-contained and said to require no outside aid.

Fire Protection for Fur Storage

(Continued from page 61)

smothering gas rushed out of the multiple nozzles.

It is this speed of extinguishment which accounts for the many instances on record where no actual evidence of the outbreak of fire remained, except for the fact that the system had operated.

For this reason, it is sometimes desirable to indicate by a special signal light that the system has discharged. This can be ascertained immediately by glancing at the position of the levers and weights in the valve frames, but it is also possible to place a signal light near the building entrance, or wherever else desired, so

that a watchman or employee upon entering the premises would know if he saw the light on that trouble had occurred and that the cylinders must be recharged.

ADT System

In the case of the Yale Cold Storage Corp., an American District Telegraph alarm system was also installed. This employs its own fire-detection system, operating on the same principle of rate-of-temperature-rise which is incorporated in the fire-extinguishing system. This offers double protection, the one automatically releasing the fire-extinguishing

COLUMBUS, OHIO

Established in 1882

Columbus Terminal Warehouse Company

55-58 Terminal Way

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Modern warehouses and storage facilities. A.D.T. System. Private double track siding. Free switching from all railroads.

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Consign Your Household Goods Shipments to

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Packing—Shipping—Storage—Local and Long Distance Moving—Steel and Concrete Warehouse—Private Siding



EDWARDS TRANSFER AND STORAGE CO.
595 South Third St., Columbus 15

Member—National Furniture Warehousemen's Association. Agent—Allied Van Lines, Inc.



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Household Goods Storage

Burglar alarms—ADT

Local and Long Distance Moving

Agents for North American Van Lines, Inc.



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THE MERCHANDISE WAREHOUSE CO.

370 West Broad St., Columbus 8

Complete service for

MERCHANDISE STORAGE AND DISTRIBUTION

Private Siding NYC and Big Four

14 Car Capacity

Pool Car Distribution A.D.T. Service

Centrally Located Modern Facilities

Members: A.G.W.—O.W.A.—A.W.A.



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The NEILSTON STORAGE CO.

260 EAST NAGHTEN ST., COLUMBUS 15

Modern warehouse for merchandise—Low Insurance—Central location in jobbing district—Private railroad siding—Pool cars distributed.

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126 OAK ST.

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Merchandise—Household Goods

Wright Service to Meet Your Requirements

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WAGNERS SERVICE, INC.

Pennsylvania Railroad and Lowry Ave.

A warehouse service that embodies every modern facility for the storage and distribution of Household Goods and Merchandise—Motor Freight Service—Door to door delivery at Dayton, Springfield and Columbus daily.

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Automatic fire and burglar alarms—ADT
Long Distance Moving

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Phone Main 2118

GREAT LAKES MARINE CORP.

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Toledo's only warehouse having combined Waterfront and Railroad Facilities.

Storage-In-Transit Privileges.

Merchandise Warehousing

Stevedoring

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800—COLD
400—DRYPRIVATE SIDINGS
N.Y.C. AND
B.&O. RR's**GREAT LAKES TERMINAL WAREHOUSE CO.**

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COMPLETE WAREHOUSE FACILITIES

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Merchants and Manufacturers Warehouse Co.Office and Main Warehouse: 15-23 So. Ontario St., Toledo 3
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Center of Jobbing District

Sprinklered Buildings—200,000 square feet Dry Storage—70,000
cubic feet Cool Storage—Private Sidings—Nickel Plate Road.
New York Central—Free Switching. Merchandise Storage—Pool Car
Distribution—Negotiable Receipts—Transit Storage Privileges—
Low Insurance Rate—City Delivery System.

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"QUICK SHIPPERS"

**TOLEDO TERMINAL
WAREHOUSE, INC.**

128-138 VANCE STREET, TOLEDO 2, OHIO

Merchandise storage . . . Pool car distribution . . .
Fireproof . . . Private siding Nickel Plate Road
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sit storage arrangements . . .
Motor truck service . . . Lo-
cated in Jobbing District . . .MEMBERS: American Warehousemen's
Association
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ciation
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Since 1878

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**Fisher-Cilder****CARTAGE & STORAGE CO.**Household Goods—Pool Car Distribution—
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J. A. MINEHART J. E. MINEHART C. R. PAISLEY
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EST. 1887**HERBERT & SON CO**
Incorporated 1922CRATING - PACKING - MOVING
ALLIED
VANS
N.F.W.A.Main Office: 646-652 Market St., Youngstown 2
Branch Custer and Elm St.

There are no refrigerating units, motors or pumps which could cause the system to fail, engineers state, or which require frequent checking and care. The tremendous force of its own expansion upon release from the high pressure under which it is stored serves to drive the gas through the piping and out of all nozzles, to provide quick, uniform blanketing of the entire space.

No Deterioration

The carbon dioxide itself does not deteriorate, freeze or corrode its piping. Periodic inspection to guard against tampering, and recharging of the cylinders when needed, constitutes the only upkeep necessary. This simplicity of principle and minimum of maintenance give added dependence on the performance of the system over long periods. Cases are reported on record where Kidde high-pressure systems have been inactive for almost 20 years, and then have functioned perfectly at the outbreak of fire.

Aside from questions of speedy and efficient extinguishment, there is the all-important consideration of possible damage caused by the extinguishing agent itself. Here carbon dioxide may be said to be at the head of the list. Water is a tried and true fire extinguisher, but it often does as

much damage as fire itself. This would be especially true in the case of fur storage vaults, record vaults, and many other instances. And where flammable liquids, such as gasoline, fuel oil, paint, lacquer, etc., are encountered, water can be useless or dangerous.

Causes No Damage

Carbon dioxide, being chemically inert, causes no change in any materials it touches. It is absolutely dry and according to facts leaves no odor or mess whatever. It can readily be seen how advantageous this would be in the case of furs; any which were not actually damaged by fire before the system went into operation, would emerge unscathed. The chilly breath of the gas would help rather than harm the pelts, and any snow which forms in flakes as it is discharged changes back to gas without damage.

This snow has been the subject of some misguided assumptions by feature writers, who infer that its presence aids the extinguishing process by cooling. Actually, this is not true to any practical extent, no matter how large the percentage of snow formed. The maximum cooling which can be obtained by any form of carbon dioxide equipment is less than one-third that of water, according to the National Fire Protection Assn., and should therefore be disregarded. However, when engineered for speedy discharge it does its job most efficiently in its own way, that of choking the fire by cutting down its oxygen supply.

It would seem that furs which are stored in vaults protected by this time-tested high-pressure system are as completely safe from fire as it is possible to keep them.

Plywood Fumigation Unit

Fumigation chambers of Douglas fir plywood are being used extensively by the Army to exterminate lice, which follow the Army and cause disease. The portable units measure 6 ft. 6 in. high x 9 ft. 6 in. long, and can accommodate clothing of 75 men per hour for fumigation. A single panel of

5-ply exterior grade plywood forms each of six sides, while the floor, front and back are of ¾-in. panelling. Sides and roof are ½-in. stock. A toxic preservative sealer is applied to the plywood and the entire cabinet is given two coats of drab enamel. (Haskell)

For Shippers' Convenience, States, Cities and Firms are Arranged Alphabetically

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Cold Storage Research to Continue Under Sponsorship of Foundation

The Refrigeration Research Foundation, a source of information as well as financial aid in answering the numerous questions relative to cold storage, is now going into its second year of active organization.

In a recent report published in "Ice and Refrigeration" concerning the success of the Foundation as sponsor of cooperative research projects in experimental stations, universities and other agencies, some problems and investigations designed to produce facts for their solution were listed as below:

"Fruits, such as apples and pears, give off certain gaseous, volatile materials as they ripen, which may stimulate ripening of all fruits in the same room. Scalding of apples, probably the most serious storage trouble of this fruit, is caused by these materials and present control methods are not adequate. Air conditioning and chemical absorption of these materials is to be studied as a practicable remedy for this problem. Methods for lengthening storage life of foods by removal of volatile materials produced by stored products from the atmosphere of the refrigerated room are being investigated by Dr. R. M. Smock, associate professor of pomology, Cornell University.

"A wartime development is the ex-

tensive use of boneless frozen beef by the armed forces. There is every indication that storage and use of frozen meats will increase considerably in the postwar period. An investigation by Dr. C. W. DuBois, head, food preservation dept., Louisiana State University, is determining the effect different rates of freezing beef have on its tenderness, flavor and general quality and with storage conditions producing the best results.

"Storage and handling of eviscerated frozen poultry offer advantages in space and weight savings which have proved especially interesting to the armed forces. Further information on the subject will also be of value in the future. The palatability and histologic changes during refrigerated storage of eviscerated poultry are being investigated by Dr. G. F. Stewart, Research Professor, Poultry Products Technology, Iowa State College.

"Fruit juices and concentrates, notably orange juices, preserved by pasteurization, suffer greatly in quality and vitamin content. Freezing storage and concentration by freezing may prevent these losses and considerably stimulate the use of these products. The juice and concentrate field promises large development in this country. Behavior of

frozen pack juices and concentrates in refrigerated storage is being investigated by G. L. Marsh, lecturer and assistant chemist, College of Agriculture, University of California.

"Preliminary studies have suggested a method of developing and maintaining high relative humidities in cold storage rooms. Original objective has been prevention of surface microbial development by controlling humidities and air flow and the purpose of the project is to establish the practicability of the method. A study of refrigeration methods, especially as to the maintenance of desired relative humidities with respect to preservation of food products is proceeding under the direction of Dr. W. L. Mallmann, research professor, department of bacteriology, Michigan State College.

"White potatoes are a very important storage vegetable. The potato is also recognized as one of the cheapest sources of ascorbic acid (vitamin C). However, tubers must be held at low temperatures (40° F.) during much of the winter to prevent sprouting, and "new" or early potatoes are held at low temperatures in transit and later, in order to retard decay and shrinkage. Below 50° F. ascorbic acid is lost rapidly. It is very desirable to know how to manipulate potato storage with regard to low temperatures so as to maintain dormancy and yet preserve the greatest amount of ascorbic acid. The effect of storage temperature and humidity upon vitamin C content on

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Phone: Sup. 7180

white potato tubers and the sugar content of white potato tubers is being investigated by Dr. H. O. Werner, professor of horticulture and associates in the University of Nebraska.

"Other investigations are concerned with chilling injury of certain vegetables during cold storage, odor removal in refrigerated storage, re-

frigerated storage of dried fruits, refrigerated storage of fresh and frozen shrimp and retention of nutritive properties in apples during storage. All of the subjects covered are timely and practical in nature. They give promise of most important additions to knowledge and methods of refrigerated handling of perishables."

reached by the recent International Civil Aviation Conference at Chicago."

Mr. Radcliffe suggested there be included in the practical program a resolve by all foreign traders to study all international proposals purely from a foreign trade angle and to keep in touch with Senators and Congressmen on the subjects presented.

"I think we all agree that very soon there should be held a conference between the United Nations with respect to international economic collaboration," said Mr. Radcliffe. "In the postwar period there must be no return to any form of economic warfare between men of good will." (Herr)

Liberalized Reciprocal Trade Act Foreign Exchange Commission Urged

(Continued from page 41)

between seven and ten billion dollars a year. If exports stabilize at that level, he said, the inevitable question arises as to what will foreign customers use in payment for the goods they receive from United States manufacturers.

He emphasized that the importation of gold will not be the solution, but that the true answer lies in a great expansion of imports of foreign raw and semi-manufactured products as well as manufactured goods ready for consumer use.

Mr. Radcliffe declared that this country must give thought to postwar problems by adopting a program of "Preparedness for Peace," while, at the same time, exerting every effort to win the war.

"A program for postwar foreign trade may be divided into three categories," he said.

"First, action on the international level involving agreement between the United Nations.

"Second, action on our national level requiring action by the Congress, the Executive, or both.

"Third, action on the commercial level.

"We must recognize that whatever mechanisms are provided will be of no avail unless the United Nations commit themselves to a progressively freer flow of goods and services between all countries. We are also interested in the five freedoms of the air contained in the conclusions

Expands System Of Trade in SA

Recognition of the increasing demand for U. S.-made goods in Latin America and stimulated postwar trade prospects was reflected in the announcement of a changed system of distributing automotive parts in South America by Borg-Warner International Corp.

A field staff will be organized. Larger distributors, able to carry sufficient stocks to supply the trade, are being set up in all of South America, Trinidad, and Puerto Rico, it is stated.

Russia Receives 20,000 Tons of Seed

The United States has supplied 20,000 tons of seeds to Russia for spring planting to abate 1945 food shortages.

The War Food Administration said the seeds—one-half of the yearly agreed upon delivery to Russia—will be for use primarily in the Ukraine's rich fields recaptured from the Germans.

Inflation Reported Gripping SA

An analysis by Life Insurance Companies in America of official indexes published by various governments reveal that much of Latin America is in the grip of a wartime inflation, with the cost of living showing a far greater increase than in the United States.

Ineffective control measures, particularly in the failure to mobilize individual savings in the fight against rising prices, have been a major factor, according to the analysis.

Adds New Equipment

On Feb. 12 pieces of equipment at Strohm Warehouse and Cartage Co., Inc., Indianapolis, Ind., were destroyed by fire. However, by the end of the month, 14 new pieces had already been delivered and the rest was expected soon afterward, according to Ira C. Strohm, president.

Aluminum Box Cars



JUST OFF THE ASSEMBLY LINE is the first of 30 specially built aluminum box cars being manufactured by Mt. Vernon Car Mfg. Co., division of H. K. Porter Co., Inc., in conjunction with Reynolds Metals Co. using Reynolds aluminum. Having same capacity as the conventional type box car, some of the new cars are being equipped for high speed service with passenger trains. Rock Island Railroad, Minneapolis and St. Louis Railway Co. and the Alton Railroad are prospective users.

Weekly Check-up Urged For Storage Batteries

Truck, bus and passenger car operators have been urged by the Office of Defense Transportation to make weekly check-ups of their storage batteries. The appeal was made in a maintenance bulletin calling for proper and regular storage battery maintenance because of increased manpower and material shortages.

Storage batteries, the ODT stated, should be considered as a wearing part of an automotive vehicle since their useful life is limited. Batteries must be used and charged to be kept in operating condition and if merely left standing without charge, they will deteriorate until they become useless.

The ODT pointed out that battery dealers have to check batteries on their shelves awaiting sale, at frequent intervals to keep them in usable condition. The individual car owner cannot store a new battery in his basement for six months or so and still expect to have a useful battery. Six months' storage without proper and frequent charging will produce nothing more than a hard rubber box full of lead and chemicals which are useless insofar as the storage of electricity is concerned.

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People..



Directors, officers of Cincinnati Terminal Warehouses Inc. elected at the 1945 annual meeting were: William T. Semple, president and chairman of the board; Este Lea, vice president; Charles W. Ireland, secretary; DeWitt W. Balch, treasurer; John R. Bullock, assistant treasurer; Harry Foster, general manager; Messrs. Lea, Ireland, Balch, Bullock, Warner Atkins, W. M. Hardt, II, John H. More, J. N. Field, E. Webster Harrison and John F. Henry, directors. (Grissam)

Joseph H. Meyer, Federal Storage and Moving Co. head and Chicago's Cosmopolitan National Bank vice president, has been named acting president succeeding the late Jacob R. Darmstadt.

Karl S. Wright, recently promoted to t. m., Carborundum Co., Niagara Falls, N. Y., has been elected president, Niagara Frontier Industrial Traffic League, succeeding William J. Holehouse, t. m., Trico Products Corp. Others newly elected are: Henry L. Schneider, t. m., J. H. Williams & Co., first vice president; Warner L. Bullock, t. m., William Hengerer Co., 2nd

vice president; Herbert F. Gareis, manager, Knowlton Warehouse Co., treasurer; John W. LeRoy, t. m., Houde Engineering Division.

Charles Morgan, of Morgan Brothers, has assumed presidency, N. Y. Furniture Warehousemen's Assn. John Hoey, of Manhattan Storage, is vice president; Emory Rorabeck, secretary; Charles Morris, treasurer.

G. E. (Jerry) Gustafson, for many years western traffic manager, New York, Ontario & Western, as of Feb. 15 became affiliated with Boston & Maine in the same capacity. Mr. Gustafson has been with the N. Y. O. & W. since 1920, mostly in the central western territory after having been in the service of the New York Central at Chicago from 1914 to 1920.

All incumbent officers of Illinois Assn. of Merchandise Warehousemen were re-elected at the annual business meeting and are as follows: President, Harry Partridge, vice president, Anchor Storage Co.; vice president, M. B. Bowers, assistant general manager,

Midland Warehouses, Inc.; secretary, Miss F. E. Berg, Wakem & McLaughlin. Harry Pratt was continued as acting secretary and H. G. Marsh, as assistant secretary. Bryan Overfield, Crooks Terminal Warehouses, and O. J. McAloon, Producers Warehouse Co., were elected to the board. (Slawson)

Harold P. Curtis has been named Pacific Coast manager, Rustless Iron & Steel Corp. of Baltimore, Md., with supervision over company affairs in California, Oregon and Washington, replacing Thomas L. Moore, now manager of western states sales. Mr. Curtis has headquarters in Los Angeles. (Herr)

V. E. Gumbleton has been appointed director of purchases, Timken-Detroit Axle Co., and J. L. Griffin, purchasing agent for all the firm's Detroit Axle plants.

Edith M. Webster, manager, administrative office, Academy of Advanced Traffic, has relinquished her duties for a Red Cross overseas assignment.

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 Complete warehouse and distribution service.
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 Storage all kinds of General Merchandise, Pool Car
 Distribution, Lowest Insurance.
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THE PRICE-BASS CO.
 194-204 Hermitage Ave., Nashville 2
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 Automatic Sprinklered—Spot Stock and Pool Car Distribution—
 Private Siding

E. O. Cocke, general traffic manager, TWA and one of the Transcontinental Airline's first employees, was elected vice president, traffic, at a meeting of the Board of Directors last month. Mr. Cocke has been general traffic manager since June, 1942, and is now in his 16th year of service with TWA.

At Kansas City Warehousemen's Assn. 35th annual meeting in February, following were elected: Frank M. Cole, Radial Warehouse Co., general president; L. J. Canfield, Interstate Moving & Storage Co., general secretary-treasurer; Harry A. Dale, W. E. Murray Transfer & Storage Co., vice president, household goods division; Morris M. Stern, Mid-West Terminal Warehouse Co., vice president, merchandise division; R. Frank Wallace, Crooks Terminal Warehouses, Inc., Oscar W. Thomas, A B C Storage Co., O. S. Anderson, Adams Transfer & Storage Co., directors.

Recent promotions in the Minnesota Mining and Mfg. Co. tape division include: Bernard W. Lueck, sales engineer to products sales manager of industrial "Scotch" masking tape, sandblast stencil and "Scotch-Rap," with headquarters in St. Paul, Minn.; Robert L. Westbee, to sales manager of electrical tape and electrical insulation products; C. N. Del Porte, who has been working out of St. Louis,

Mo., Cincinnati, O., Chicago, Ill., offices in the shoe tape line, is new sales manager for that product with headquarters in St. Paul.

Appointment of R. F. McKee as operations engineer, Denver, Colo., has been announced by Continental Air Lines.

Howard S. Cullman has been chosen eighth chairman, Board of Commissioners, Port of New York Authority.

Under auspices of the International Training Administration, members of a Brazilian Technical Mission, all of whom are professors in the National School of Engineering, Rio de Janeiro, and the Polytechnic School of Sao Paulo, are in this country studying our production and educational methods. From the former school: Mauricio Joppert da Silva, professor of ports, rivers, and canals; Ruy Mauricio de Lima e Silva, professor of mineralogy and geology; and Alano Leon da Silveira, professor of metallurgy. From Sao Paulo: Paulo Guimaraes da Fonseca, professor of Industrial Chemistry; Homero Barbosa de Assis Martins, professor of electrical telecommunications; and Filinto Antonio Guerra, professor of inorganic chemistry.

Roy W. Shaver has been elected president, general manager, Gould Paper Co., Lyons Falls, N. Y., succeeding

Gordon H. P. Gould. (Kline)

Everett B. Michaels, formerly executive vice president, has been elected president, Hyman-Michaels Co., Chicago, Ill., railroad equipment. (Kline)

Results of the Associated Warehouses, Inc., 1945 election were as follows: James Gallagher, Jr., Gallagher's Warehouses, Philadelphia, Pa., president; H. W. Verrall, Railway Terminal & Warehouse Co., Chicago, Ill., vice president; Robert R. Lester, Merchandise Warehouses, Inc., Kansas City, Mo., treasurer; Clyde E. Phelps, Associated Warehouses, Inc., Chicago, executive secretary; E. B. Fontaine, Commercial Terminal Warehouse Co., New Orleans, La., H. E. Shiel, American Warehouse Co., Seattle, Wash., R. J. Mayer, Central Storage & Van Co., Omaha, Neb., George Lacay, Midtown Warehouse, Inc., New York City, N. Y., E. H. Ottman, National Warehouse Corp., Milwaukee, Wis., I. C. Strohm, Strohm Warehouse & Cartage Co., Indianapolis, Ind., I. S. Culver, Gibraltar Warehouses, San Francisco, Cal., P. W. Frenzel, St. Paul Terminal Warehouse Co., St. Paul, Minn., Philip Milstein, The Bankers Warehouse Co., Denver, Colo., E. A. Powers, Larkin Warehouse, Inc., Buffalo, N. Y., August Petri, Bowker Storage & Distributing Co., Inc., Boston, Mass., H. M. Overmyer, Merchants & Mfrs. Warehouse Co., Toledo, O., directors.

AMARILLO, TEXAS

ARMSTRONG TRANSFER & STORAGE CO., INC.

103 SOUTH PIERCE STREET



Merchandise Storage & Distribution
Household Goods Storage, Moving & Packing
Long Distance Operators
WM. C. BOYCE

J. A. RUSH



BEAUMONT, TEXAS

TEXAS STORAGE COMPANY

656 Neches St.

Beaumont, Texas



Merchandise and Household Goods
Warehouse, Concrete Construction
30,000 Sq. Ft. Distribution of Pool Cars
Transfer Household Goods
Agent for A.V.L. Member of N.F.W.A.—S.W.A.T.A.

CORPUS CHRISTI, TEXAS

CORPUS CHRISTI WAREHOUSE AND STORAGE COMPANY

Located AT PORT SITE
adjacent to docks NAVIGATION DISTRICT NO. 1
Storage Distribution Drayage
MERCHANDISE EXCLUSIVELY
96,400 Sq. Ft. Sprinklered Low Insurance Rates
Member: Southwest Warehouse and Transfermen's Ass'n

CORPUS CHRISTI, TEXAS

Robinson Warehouse & Storage Co.

General Offices: 1500 N. Broadway, Corpus Christi

Specialists in

General Merchandise Storage—Pool Car Distribution

Public Bonded Warehouses at Alice, Corpus Christi, Harlingen and Victoria.
Daily and overnight common carrier Motor Freight Service to Houston, San Antonio, Austin, Laredo and Rio Grande Valley, serving all intermediate points.
Expert Handling; Insurance Issued

DALLAS, TEXAS

In Dallas It's Blyson-O'Keefe

MERCHANDISE STORAGE—POOL CAR DISTRIBUTION
Our modern Centrally located warehouse is completely equipped to serve you with over 75,000 square feet of merchandise and household goods storage space.

MOVING—STORAGE—PACKING—SHIPPING



Since 1875

BLYSON-O'KEEFE
Fireproof Storage Co.

Since 1875



2201 LAWS ST., DALLAS 1
Associated with Distribution Service, Inc.

DALLAS, TEXAS

ESTABLISHED 1875

DALLAS TRANSFER AND TERMINAL WAREHOUSE CO.

Second Unit Santa Fe Building, Dallas 2, Texas

Modern Fireproof Construction—
Office, Display, Manufacturers, and Warehouse Space



Operators of the Lone Star Package Car Company (Dallas and Fort Worth Divisions)
H. & N. T. Motor Freight Line
Agents for Allied Van Lines, Inc.
A.W.A., N.F.W.A., American Chain of Warehouses
Southwest Warehouse & Transfermen's Assn., Rotary Club



DALLAS, TEXAS

Merchants Cold Storage of Dallas

Bonded

1,000,000 Cu. Ft. Cold Storage Space
Pool Car Distribution

1301-7 Broom St. — 1917 N. Houston St.
P. O. Box 5088, Dallas 2



DALLAS, TEXAS

INTERSTATE-TRINITY
WAREHOUSE COMPANY

301 North Market St., Dallas 2



Merchandise Storage and
Distribution
Household Goods Storage.
Moving & Packing
Long Distance Hauling

R. E. ABERNATHY, Pres.
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EL PASO, TEXAS

"Bankers of Merchandise" "Service With Security"

International Warehouse Co., Inc.

1601 Magoffin Ave. Inc. in 1920 El Paso, Texas



Lowest Content Insurance Rate
Fireproof Storage of Household Goods, Autos & Merchandise. State
and Customs Bonded. Private Trackage—T. & P. and So. Pac. Rys.
Pool Car Distribution—Motor Truck Service.
Members—NFWA—SFTA—Agent for AVL.

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In Fort Worth It's Binyon-O'Keefe

MERCHANDISE STORAGE—POOL CAR DISTRIBUTION
Our modern Centrally located fireproof warehouse is completely equipped to serve
you with over 90,000 square feet of merchandise and household storage space.
MOVING—STORAGE—PACKING—SHIPPING



Since 1875

BINYON-O'KEEFE
Fireproof Storage Co.

Since 1875



800 Calhoun St., Fort Worth 1
Associated with Distribution Service, Inc.

FORT WORTH, TEXAS

Agents—ALLIED VAN LINES, INC.

Storage, Cartage, Pool Car Distribution



O. K. Warehouse Co., Inc.

255 W. 15th St., Fort Worth 1, Tex.

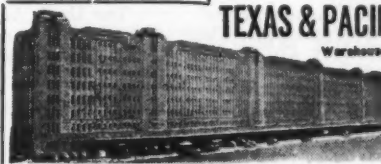


FORT WORTH, TEX.

Member—S.W.A.W.A.

TEXAS & PACIFIC WAREHOUSE CO.

Warehouse—DALLAS—FT. WORTH



Merchandise Storage
Pool Car Distribution
Office, Display and
Warehouse Space
Branch Office Facilities
Ample room for Automobiles and Truck parking
LOW INSURANCE RATES

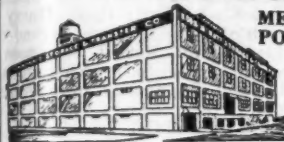
DALLAS, TEXAS

SPECIALIZING

MERCHANDISE STORAGE
POOL-CAR DISTRIBUTION

SERVING THE GREAT
SOUTHWEST AREA

EVERY ACCOUNT IS
PERSONALLY SUPERVISED
BY THE MANAGEMENT



KOON-McNATT STORAGE & TRANSFER CO.

1100 CADIZ ST., Dallas 2

CONTRACT OPERATORS FOR ALL RAIL
LINES AND UNIVERSAL CARLOADING &
DISTRIBUTING COMPANY

Over 10,000,000 Pounds of Freight Handled Monthly
for Dallas Shippers



Edwin Linthicum, district freight agent, Pennsylvania Railroad at Los Angeles, has been named western freight agent, with headquarters continuing in Los Angeles. Theodore F. Lawson, district freight agent at Rochester, N. Y., has been transferred to Los Angeles to fill Linthicum's former post. (Herr)

Appointments in the warehousing division, Reconstruction Finance Corp., of recent date include: Fred Huston, who continues as chief of warehousing, Defense Supplies Corp., to assistant chief; Harold K. Osgood, chief of warehousing, Defense Plant Corp., to chief of operations section; James L. Dixon, chief of requirements and facilities section; Myron R. Brock, chief of flow controls section.

Organization of Northwestern Stevedoring Co., Seattle, Wash., which will engage in general stevedoring and dock operation and also plans handling air carriers freight, marks the return to the waterfront of Robert M. Morrissey, veteran of the stevedoring business who retired a few years ago.

R. A. Williams has been named in charge of sales for American Car & Foundry Co., succeeding William L. Mancliff, resigned, who will continue as a director and in a consulting capacity. Arthur Tuckerman has been named assistant to vice president Charles J. Hardy, whom he will assist in the field of public relations. (Kline)

Ellis J. Waller, formerly assistant vice president, has been elected president, Boss Mfg. Co., Kewanee, Ill., glove manufacturer with plants in Toledo, Lebanon, and Bluffton, O.; Peoria, Fort Wayne, Ind.; Kansas City, Kan., and Brooklyn, N. Y. He succeeds Thomas R. Stokes, now chairman of the executive committee. (Kline)

General Motors Corp. has announced four new positions in the engineering department, Allison Division, which are being filled as follows: Roy Emerson Lynch, executive engineer; Charles James McDowall, chief development engineer; J. C. Fettes, chief turbine engineer; Dimitrius Gerdan, chief engine engineer.

Charles (Chuck) H. Le Fevre of the Sealed Power Corp. has been appointed chairman, Automotive Advertisers Council committee on advertising distribution practices.

Alf E. Lee, for many years Pacific Northwest shipping executive, lately with the Seattle Port of Embarkation in the Army Transport Service, has been named district manager in Seattle, Wash., for Interocean Steamship Corp. He succeeds Mrs. Walter Springer who held the position since the start of the war. (Litteljohn)

Among those elected to the board of directors, Illinois State Chamber of Commerce recently, were: Joseph L.

Block, executive vice president, Inland Steel Co.; J. D. Farrington, chief executive officer, Chicago, Rock Island and Pacific Railway Co.; James P. Margeson, Jr., vice president, International Minerals and Chemical Corp.; R. G. Raymond, manager of electricity sales, Commonwealth Edison Co.; William S. Street, vice president and general manager, Marshall Field and Co., all of Chicago.

O. D. Miller has been elected president, United Fresh Fruit and Vegetable Assn.

W. W. Gleeson has been named vice president and general manager, L. G. S. Spring Clutch Corp., Indianapolis, Ind., wholly-owned subsidiary of Curtiss-Wright Corp. (Kline)

Sherman S. Marr has been named manager, transportation department, LeCrone-Benedict Ways, covering nine states, with headquarters in Detroit. (Kline)

Board of Directors, City Movers Assn., New York City, unanimously voted to reelect all officers for another term: Thomas V. Ward, chairman; Samuel Pollack, vice chairman; John Rebori, treasurer; Arthur Simkovitch, secretary. Mr. Ward is serving for the eighth time as chairman.

New officers elected and installed by Portland, Ore., Transportation Club,

D and W, March, 1945—125

For Shippers' Convenience, States, Cities and Firms are Arranged Alphabetically

are Charles A. Stevenot, general agent of the Republic Carloading & Distributing Co., Inc., president. Other high shipping and transportation executives chosen by the club's membership are C. T. Kathrens, Montgomery, Ward & Co., vice president; C. W. Laird, Canadian Pacific-Soo Line, secretary; H. R. McNally, Santa Fe Railway, treasurer; H. K. Cherry, foreign economic administration, James A. Larpenteur, Interstate Freight Lines, Inc., Earl K. Sweet, Lee & Estes, directors. Fred W. Dost is retiring president. (Litteljohn)

H. R. Mack has been made manager, United States Rubber Co. truck tire sales on the Pacific Coast, a newly created position entailing direction of truck tire distribution in 11 western states.

F. M. Padelford has been appointed general manager, Witte Transportation Co., St. Paul, Minn., and will have jurisdiction over all departments and terminals of the firm.

A. A. (Jack) Manchester has been appointed assistant division manager, Emark Division plant No. 1, Thomas A. Edison, Inc., Kearny, N. J.

Lester E. Lighton, manager, development and design department, The Electric Storage Battery Co., Philadelphia, Pa., has been elected vice president in charge of engineering.

Hart H. Fleming, director of Na-

tional Foam System, Inc., Philadelphia, Pa., for 15 years, has become vice president. G. Gordon Urquhart, resigned, who will continue as technical consultant, has been named president, Wilmington Chemical Corp., New York, succeeding Herbert Waller, resigned. Henrik J. Krebs, former secretary and director, has become treasurer of Wilmington, succeeding A. D. Bestebreutje, also resigned. (Kline)

Announcement has been made of the resignation of P. M. Willcox as vice president-administrative of United Air Lines, Inc., effective March 1, to become vice president, Fred Olsen Line Agency, Ltd., with offices at New York City headquarters. Olsen Agency is United States representative, Fred Olsen & Co., Norwegian company operating fleet of cargo vessels and operating manager of the Norwegian Airline.

Charles P. Clark, vice president, Columbia Terminals Co., St. Louis, has been elected president, National Truck Leasing System, nationwide association of independent truck leasing companies recently incorporated under the laws of the state of Delaware.

The U. S. A. South Africa Conference has announced appointment of John M. Phillips as general secretary in connection with the conference lines' business between United States ports and South and East Africa. He began his duties on Feb. 1.

Appointed to 1945 executive committee, National Association of Manufacturers, are: Charles S. Davis, president, Borg-Warner Corp.; J. Holmes, president, Swift & Co.; James S. Knowlson, president, Stuart-Warner Corp. Fowler McCormick, president, International Harvester Co., and Delmar L. Kroehler, president, Kroehler Mfg. Co., Naperville, Ill., were appointed directors.

Capt. Clyde T. Gallagher, veteran of 29 years on the Great Lakes, has been elected grand lodge president, International Shipmasters' Assn., succeeding Capt. Ross W. Maitland, Buffalo, N. Y. Mr. Gallagher commanded the steamer E. W. Mudge the M. A. Hanna Co.'s ore fleet four seasons after becoming a shipmaster in 1940. Others elected were Capt. Philip E. Thorpe of Chicago first vice president; Capt. Harry Wiersch of Duluth, Minn., second vice president; Capt. Robert Thompson of Cleveland (reelected) treasurer, and Capt. John C. Murray of Cleveland secretary, succeeding Capt. M. Peterson of Buffalo.

John J. Yezbak has been named relations manager, Timken Roller Bearing Co., Canton, O., in addition to former post as head of Timken News Bureau. (Kline)

W. Carl Lohmeyer has been elected a director, Monumental Storage

HOUSTON, TEXAS

BINYON-STRICKLAND WAREHOUSES, INC.

Merchandise Storage — Pool Car Distribution
Centrally Located — Lowest Insurance Rate
Private Siding Southern Pacific Ry. Co.

Goliad & Morin Sts.

Houston 13

HOUSTON, TEXAS

Member of Interstate Terminals

FEDERAL WAREHOUSE COMPANY

915 N. San Jacinto St. Houston 2, Texas

General Merchandise Storage

Pool Car Service

Fireproof Sprinklered Warehouses

Located in the heart of the wholesale district

HOUSTON, TEXAS

Better Warehousing in HOUSTON

We operate a modern low insurance rate warehouse in the center of the wholesale, jobber, rail and truck terminal district. Most conveniently located for interior jobbers' trucks; well trained personnel; cooler space.

HOUSTON CENTRAL WAREHOUSE CO.

Commerce and San Jacinto Houston 1, Texas

Represented by
NEW YORK ALLIED DISTRIBUTION INC. CHICAGO
11 WEST 42ND ST. NEW YORK 36, N.Y. 1521 HENNINGSON AVE. MOBILE

HOUSTON, TEXAS

Houston Terminal Warehouse & Cold Storage Company

701 No. SAN JACINTO ST., HOUSTON 2

General Storage Cold Storage U. S. Customs Bonded

A. D. T. Service

Pool Car Distribution

Office Space

Display Space

Parking Space

Lowest Insurance Rate

New York Representative
Phone Plaza 3-1235

Chicago Representative
Phone Harrison 1496

HOUSTON, TEXAS

AT HOUSTON

Receiving . . .
Weighing . . .
Sampling . . .
Warehousing . . .
Forwarding . . .

. . . also Wharfingers offering
complete Shipside Services with
berthing space for eight steamers.

HOUSTON WHARF CO.

(Long Reach Docks)

OWNED AND OPERATED BY GULF ATLANTIC WAREHOUSE CO.
P. O. Box 2588 Houston 1, Texas

HOUSTON, TEXAS

PATRICK TRANSFER & STORAGE CO.

Merchandise and Household Goods Storage

Pool Car Distribution

Sprinklered—A.D.T. Watchmen

Shipside and Uptown Warehouses

Operators—Houston Division

Lone Star Package Car Co.

1117 Vine St. Agents for Allied Van Lines, Inc. Houston 2

Members N.F.W.A.
State and Local Assn.

HOUSTON, TEXAS

MERCHANDISE DISTRIBUTION

COMMERCIAL STORAGE—

OFFICE SPACE — PARKING SPACE

T. P. C. STORAGE & TRANSFER CO., INC.

2301 Commerce Ave., Houston 2

HOUSTON, TEXAS

W. E. FAIN, Owner and Manager
Established 1901

TEXAS WAREHOUSE COMPANY

Forty-four Years

Under Same Continuous Management

MERCHANDISE EXCLUSIVELY

Pool Car Distribution Sprinklered Throughout
A.D.T. Supervised Service

HOUSTON, TEXAS

Agent for Allied Van Lines, Inc.

UNION Transfer & Storage Co.

1113 Vine St., P.O. Box 305, Houston 1

Forwarding and Distributing

MERCHANDISE STORAGE

Warehouses Sprinklered Throughout

Supervised by A.D.T. Service.

SERVICE THAT COUNTS



HOUSTON, TEXAS

UNIVERSAL TERMINAL WAREHOUSE CO.

1004 WASHINGTON AVE., HOUSTON 1

Merchandise Storage—Pool Car Distribution

Sprinklered—A.D.T. Watchmen

— U. S. Customs Bonded —

— Office Space —

New York Representatives:
DISTRIBUTION SERVICE, INC.
2 Broadway (4)

Chicago Representatives:
DISTRIBUTION SERVICE, INC.
219 E. North Water St. (11)

Members A.W.A. and State and Local Associations.

HOUSTON, TEXAS

BENJ. S. HURWITZ, Pres.

WESTHEIMER Transfer and Storage Co., Inc.

2205 McKinney Ave., Houston 1

OVER 50 YEARS IN HOUSTON

Merchandise & Household Goods Storage—Pool Car Distribution—

LIFT Van Service—20 car lengths of truckage.

Fireproof Warehouses—A.D.T. Automatic Fire and Burglary Protection.

Members N. F. W. A.

Agent for Allied Van Lines, Inc.



SAN ANTONIO, TEXAS

MERCHANTS TRANSFER & STORAGE CO.

Merchants & Transfer Sts., San Antonio 6

Complete Storage and Distribution Service

Over 50 years of satisfactory service

Member of A.W.A.—N.F.W.A.—S.W.A.

Merchandise

Household Goods

SAN ANTONIO, TEXAS

Muegge-Jenull Warehouse Co.

BONDED FIREPROOF

POOL CAR DISTRIBUTORS
STORAGE AND DRAYAGE

Dependable Service Since 1913

SAN ANTONIO, TEXAS

Agent for Allied Van Lines, Inc.

Scobey Fireproof Storage Co.

811-339 North Medina St., San Antonio 7

HOUSEHOLD - MERCHANDISE - COLD STORAGE -

CARTAGE DISTRIBUTION

INSURANCE RATE - - - 10c

Members of 4 Leading Associations



SAN ANTONIO, TEXAS

SOUTHERN TRANSFER & STORAGE CO.

P. O. BOX 4097, STA. A. SAN ANTONIO 7

Specialists in Merchandise Distribution

FIREPROOF CONSTRUCTION

BONDED STORAGE



Represented by

ALLIED DISTRIBUTION INC.

CHICAGO

11 WEST 42ND ST. PHIL. 6-0667

1133 NEWBERRY AVE. MON. 3-21

TYLER, TEXAS

J. F. WOMACK, Owner & Manager

TYLER BONDED WAREHOUSE & STORAGE COMPANY

Established in 1923

Bonded under the Laws of Texas

General Storage and Distribution from the Center of East Texas.

Specializing in Pool Car Distribution and Merchandise Warehousing.

OGDEN, UTAH

MEMBER OF A.W.A.

WESTERN GATEWAY STORAGE CO.

GENERAL WAREHOUSING

POOL CAR DISTRIBUTION

MERCHANDISE AND COLD STORAGE



SALT LAKE CITY, UTAH

CENTRAL WAREHOUSE

520 West 2nd South St., Salt Lake City 1

Fireproof

Sprinklered

Insurance rate 15c. Merchandise Storage.

Pool Car Distribution. Office Facilities.

Member A. W. A.



SALT LAKE CITY, UTAH

Merchandise Storage and Distribution

Over 1,000,000 cubic feet reinforced Concrete Sprinklered Space

Insurance Rate 11 Cents

CORNWALL WAREHOUSE CO.

353 West 2nd South St., Salt Lake City 1

Represented by

DISTRIBUTION SERVICE, INC.

New York-Chicago-San Francisco

SALT LAKE CITY, UTAH

Storage—Pool Car Distribution

KEYSER MOVING AND STORAGE CO.

328 West 2nd South, Salt Lake City 1 Est. 1910

73,000 sq. ft. space. Reinforced concrete and brick. Dignified,

accessible, and central location. UP. spur with free switching from

or to other lines. P.O.D. service rail or truck. Systematic delivery

service twice daily. 90% Co-ins. rate 19¢ per \$100.00. A.D.T. automatic burglar and fire protection. Office and dock space available.

Member AWA—UWL—UWA—AWI



SALT LAKE CITY, UTAH

"This is the Place"

FOR BETTER SERVICE

SECURITY STORAGE & COMMISSION CO.

230 S. 4TH WEST ST., SALT LAKE CITY 1

Over 39 Years' Experience

Merchandise Warehousing - Distribution

Sprinklered Building - Complete Facilities

Lowest Insurance Cost - A.D.T. Watchman Service

Office Accommodations - Display Space

Represented by American Chain of Warehouses, Inc.

New York (17)

Chicago (4)

350 Park Ave. 33 W. Jackson Blvd.

MEMBER:
A.W.A.—U.W.A.



NORFOLK, VA.

HOUSEHOLD AUTOMOBILE STORAGE MERCHANDISE

NEW-BELL STORAGE CORPORATION

22nd St. & Monticello Ave.

NORFOLK 10, VIRGINIA

MODERN SPRINKLER EQUIPPED WAREHOUSE

Lowest Insurance Rate in Norfolk. Pool Car Distribution

WE SPECIALIZE IN MERCHANDISE STORAGE

AND DISTRIBUTION

AGENTS AERO MAYFLOWER TRANSIT COMPANY

Member N.W.A. & S.W.A.



NORFOLK, VA.

Serving—Yor. Beach, Ft. Monroe, Newport News, Williamsburg and Tidewater Virginia.

Security Storage and Van Co.

530 FRONT STREET

Norfolk's Finest Fireproof Furniture Warehouse

Motor Van & Lift Van Service

Collections — Distribution

Members—NAT'L F.W.A.—ALLIED VAN LINES

NORFOLK, VA. Established 1892

SOUTHGATE

STORAGE COMPANY, Inc.

239 Tazewell St., Norfolk 10



For economical storage and distribution you will want to know more about our individualized services. Our fireproof warehouses are in the Southgate Terminal, on the waterfront and in the center of Norfolk's wholesale district. Served by all rail, water and motor lines.

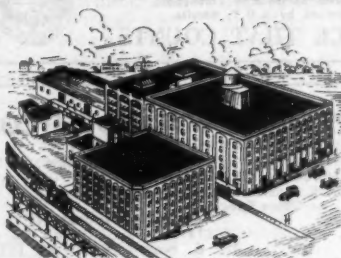
Write for Booklet—"7 POINT DISTRIBUTION"

MEMBER:
A.C.W.
A.W.A.
S.W.A.
U.S.G. of C.

RICHMOND, VA. Established 1908

VIRGINIA BONDED WAREHOUSE CORPORATION

1700 E. CARY ST., RICHMOND 3, VA.



160,000 SQ. FT. SPACE
BUILDINGS SPRINKLERED
U. S. BONDED & PUBLIC WAREHOUSES
MERCHANDISE STORAGE & DISTRIBUTION
INSURANCE RATES
25¢ PER \$100 PER YEAR

RICHMOND, VA. 67 Years of Uninterrupted and Expert Service

BROOKS TRANSFER AND STORAGE CO., Inc.

1224 W. Broad Street, Richmond 3, Va.


Three Fireproof Storage Warehouses—\$10,000 Cubic Feet Floor Space—Automatic Sprinkler System—Low Insurance Rates—Careful Attention to Storage—Packing and Shipping of Household Goods—Private Railroad Siding—Pool Car Distribution—Motor Van Service to All States—Freight Truck Line.

Member of N. F. W. A.—A. V. L.—A. T. A.

ROANOKE, VA.

H. L. LAWSON & SON

Finance and Storage
Pool Car Distributors
General Merchandise Storage



421-25 EAST CAMPBELL AVE.
ROANOKE 7, VIRGINIA

RICHMOND, VA.

THE W. FRED. RICHARDSON

Security Storage Corporation

Main at Belvidere, Richmond 20
PACKING FOR SHIPMENT
Local and Long Distance Movements
ESTABLISHED 1897
Agent for Allied Van Lines, Inc.


STORAGE HOUSEHOLD GOODS
OBJECTS OF ART
FURS - RUGS
VALUABLES

ROANOKE, VA.

ROANOKE PUBLIC WAREHOUSE

369 W. Salem Ave., W., Roanoke 5

Capacity 500 Cars
Private Railroad Siding
Automatic Sprinkler
Accurate Accounting



We make a Specialty of Storage and Pool Car Distribution for Agents, Brokers and General Merchandise Houses.
Member of American Chain of Warehouses

Carpet Cleaning Co., Baltimore, Md., to fill the unexpired term of G. Raymond Whitney, vice president, who is retiring after 33 years with the company. George M. Smucker was made vice president, and W. M. Magruder, vice president and secretary, was elected to the additional position of treasurer. (Toles)

Fruehauf Trailer Co. has announced promotion of H. F. Howard, general plant manager, Chevrolet Division factories, Flint, Mich., to vice president in charge of manufacturing with headquarters in Detroit, Mich.; and A. K. Tice, in charge of sales department for several years, to a vice presidency as well as Director of sales.

Ervin G. Stier, former works auditor, International Harvester Co., Fort Wayne, Ind., has been advanced to assistant auditor of manufacturing, motor truck division, the Chicago, Ill., general office.

W. M. Laughton has been named general manager, Bethlehem Steel Co., San Francisco and Alameda, Cal., divisions. Connected with Bethlehem for two decades, Mr. Laughton served as general superintendent in the Bay district from 1937 to 1939, and as assistant general superintendent from October, 1939, to December, 1944. (Herr)

William W. Caldwell, vice president, Building Construction firm of Iglehart, Caldwell & Scott, Inc., of New

York, has been elected president succeeding Stewart B. Iglehart, now chairman of the board.

Appointment of Willard Walker, vice president, Mack-International Motor Truck Corp., to managerial post, Greater New York Division, has been announced by C. T. Ruhf, president of Mack Trucks, Inc. For five years Mr. Walker has been head of Mack's Government Department.

Fell Vaughan, hauling contractor, has purchased an E. Broadway site, North Little Rock, Ark., for a truck terminal and docks. Formerly used by Oliver Construction Co., the property was owned by Mr. and Mrs. A. L. Wooten and Mr. and Mrs. D. E. Wooten. (Grissam)

Davey Compressor Co., Kent, O., announces appointment of Wallace R. McKinney, Jr., 154 South Franklin St., Mobile, Ala., to provide sales and service for Davey equipment in southern counties of Alabama and in West Florida counties around Pensacola. Murray Machinery Co., Sales Division, Inc., 169 State St., Augusta, Me., headed by James A. Murray, president, and Ralph Cole, vice president, will cover Maine and New Hampshire, and Ohio Muf-L-Cote Co., 71 S. Broadway, Akron, O., will handle Akron-Canton-Massillon areas.

Capt. A. E. Williams, who left his post in 1939 as vice president in charge of travel services in Europe for American Express Co., Inc., for

war service with the British Government, has been released from his duties with the Admiralty and returned to his former duties.

Ernest P. Schroeder has been named manager, foreign engineering department, Westinghouse Electric & Mfg. Co., with John T. Mathews as assistant. Mr. Schroeder, who retains his duties as resident representative of the Westinghouse Electric International Co., succeeds D. I. Vinogradoff, transferred to that organization on special assignment. (Kline)

John C. Thornton, for 16 years with Plee-Zing, Inc., Chicago, Ill., has resigned as merchandise director, assistant secretary, to work on a distribution plan which he plans to present to food industry soon. (Kline)

John C. Lake, for 14 years with E. I. du Pont de Nemours & Co., Inc., has become vice president and special assistant to the president of Grenada Industries, Inc. (Kline)

Announcement has been made of appointment of James Thomson to the Military Programs staff, Curtiss-Wright Corp., Propeller Division, Caldwell, N. J. He will handle export liaison and contacts with foreign customers for the division.

Ralph J. Cordiner has been elected vice president and assistant to the president, General Electric Co., with general administrative duties as designated by the president.

Louis G. Goetz has been named vice president in charge of central operations, Trundle Engineering Co., Cleveland, O., management engineers, and will supervise service activities in Ohio, Michigan, and adjacent territory in Indiana, Kentucky, Pennsylvania, and western New York state. (Kline)

Appointment of Courtleigh W. Eliason as assistant to George Romney, managing director, Automotive Council for War Production, has been announced.

Ralph Maxson, Canton, O., has purchased 95 per cent of the common stock, St. Paul Engineering and Mfg. Co., St. Paul, Minn., for \$1,000,000, and will become president. Purchase included Heston & Anderson Co., Fairfield, Iowa, subsidiary, which will continue as a division. (Kline)

Maurice B. Bursett and Jacob (John) Schanke, two veteran Seattle, Wash., waterfront shipping executives, recently received promotions in the Naval Supply Depot of Smith Cove. Mr. Bursett was promoted from pier superintendent in the cargo operations division to foreman of the supply depot, and Mr. Schanke succeeded him. Replacing Mr. Schanke in his quartermaster-labor position is Walter J. Chapman, former mobile lock equipment operator. (Littelljohn)

Thomas B. Wilson, War Shipping Administration director for Brazil, with headquarters in Rio de Janeiro, has returned to this country and expected to return to the American President Lines in San Francisco, Cal., for re-assignment. (Littelljohn)

New officers elected by Foreign Trade Assn. of Southern California are: Lisle M. Gray, president; Roy Barto, first vice president; Fred H. Beeman, second vice president; John A. Smith, secretary; Henry Humann, treasurer; and George Spillenaar, executive secretary. Directors are: C. C. Brunk, Michael Harris, Romeo Lindtner, Miles C. Reinke, H. R. Roodhouse, Alden T. Ross, Herman Yaras, Roland C. Stevens. (Herr)

Election of Ernest Kanzler of Detroit, Mich., and M. P. Ferguson of South Bend, Ind., to board of directors, Bendix Aviation Corp., is announced. Mr. Kanzler is chairman of Universal C. I. T. Credit Corp., president of Commercial Investment Trust Corp., and a director of Commercial Investment Trust Corp., National Surety Corp., Holtzer-Cabot Electric Co. and Micro Switch Co. Mr. Ferguson is general manager, Bendix Products Division, South Bend.

Tracy Walsh has been appointed executive assistant to vice president in charge of operations, Braniff Airways.

OBITUARY

Albert Sydney Bonner, 53, president, Clark Equipment Co., Buchanan, Mich., automotive equipment. Mr. Bonner had previously served as secretary-treasurer, director and executive vice president.

John L. Ehlinger, 65, for many years active in Spokane, Wash., and the Inland Empire (contiguous trading territory of the hinterland) in food distribution. He was a pioneer Spokane food merchandising broker,

and came from New York 37 years ago. (Littelljohn.)

F. H. Hogue, pioneer fruit man of Idaho and head of firm bearing his name in Payette, Idaho. He also operated a large cold storage plant.

B. F. Redman, 83, retired president, Redman Van & Storage Co., operating three warehouses in Salt Lake City and fleet of carriers from Omaha,

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Neb., to California Coast. Mr. Redman, a founder of Western Air Express, was first paying passenger to ride on a commercial airline in the U. S.

John W. Pauling, 55, vice-president, Minneapolis-Honeywell Regulator Co. (Kline.)

Donald Lonergan, 44, chief clerk, Transmarine Navigation Corp., Los Angeles Harbor. With Transmarine since June, 1940, Mr. Lonergan was previously in shipping circles, had been with Swayne and Hoyt, both in Los Angeles and San Francisco. (Herr.)

Arthur J. Walsh of Belmont, Mass., who joined Piers Operating Co., Boston, Mass., as marine superintendent in 1934 when that company started operating the Army Base Terminal. He has also been superintendent of warehouse, Manufacturers Warehouse, 46-61 Melcher St., Boston, Mass., operated by Piers Operating Co. (Wellington.)

William A. Payne, 76, engaged in the storage business in Philadelphia, Pa., for more than 50 years. (Toles.)

T. P. Brewster of Los Angeles, Cal., superintendent of telegraph, Santa Fe Railway. He was vice chairman of the telegraph & telephone section, Association of American Railroads. (Herr.)

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Joseph M. Howard, 73, former president, Denver Transit & Warehouse Co., Denver, Colo. Born in Illinois, Mr. Howard went to Denver in 1880 where he attended school and entered the transfer business. He retired in early 1920s. (Alexander.)

Louis H. Gray, 86, retired transportation executive. Mr. Gray was born in Allegheny, Pa., and went to Seattle, Wash., as general freight agent, Great Northern Railway, in 1895. With White Pass and Yukon Railroad completion, he became general traffic manager with headquarters in the north. After his return to Seattle, Mr. Gray established his own steamship company, L. H. Gray & Co., and handled freighters between Seattle and California ports. (Haskell.)

William A. Payne, 76, of Philadelphia, Pa., who had been engaged in the moving and storage business for 50 years.

Donald B. McBride, of Seattle, Wash., 80, president, Oregon Marine & Supply Co., Portland, Ore., and Pacific Marine & Supply Co., Seattle. (Haskell.)

William T. Days, 63, of Los Angeles, Cal., traffic authority for various west coast steamship companies and other concerns for past two decades. Mr. Days went to the west coast in 1923

from St. Louis, Mo., where he had been traffic manager for the Mallinckrodt Chemical Works. He served as assistant manager, Los Angeles Harbor Department, until 1926 when he became office manager, Los Angeles office of Luckenbach Steamship Co. He held the latter position until he went with the British Ministry of War's transport office in July, 1942, with whom he was affiliated at the time of his death. (Herr.)

Gordon H. Hamilton, 58, Oak Park, Ill., vice president, Glidden Co., Cleveland, O. (Kline.)

Robert Lee Taylor, 74, of Memphis, Tenn., former president, Federal Compress and Warehouse Co. Mr. Taylor, at one time affiliated with Grenada, Miss., Compress and Warehouse serving as its president in 1915, consolidated 28 corporations into Federal Compress and Warehouse Co.

C. L. Chapman, 65, of Nutley, N. J., manager of mail, baggage and express traffic of the Erie R. R. He formerly served as assistant general traffic manager, acting general passenger agent, general freight agent and assistant to vice president in charge of traffic. Mr. Chapman was a member of the New York Traffic Club.

Thomas Carr Powell, 79, former president and board chairman, Chicago & Eastern Illinois Railroad.

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